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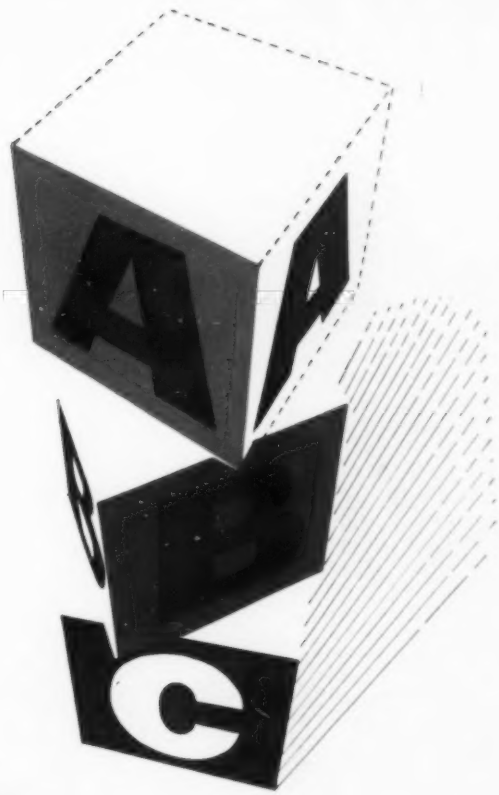

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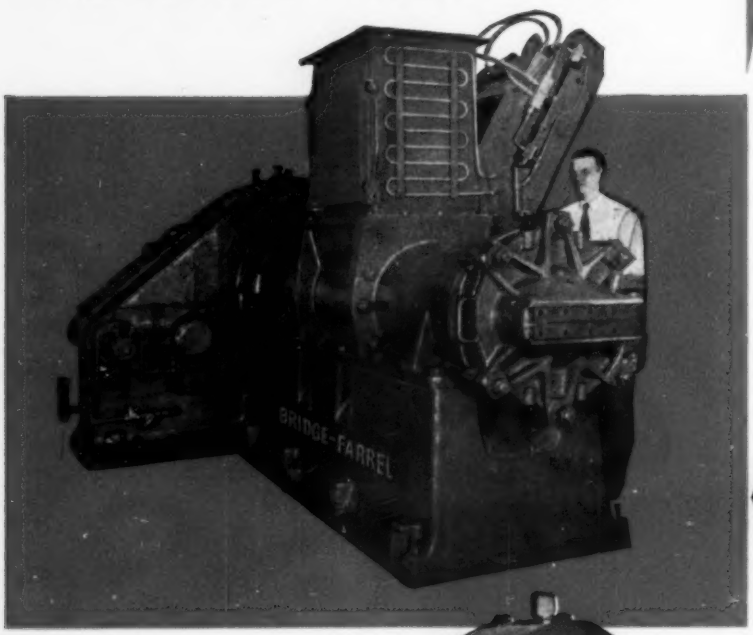

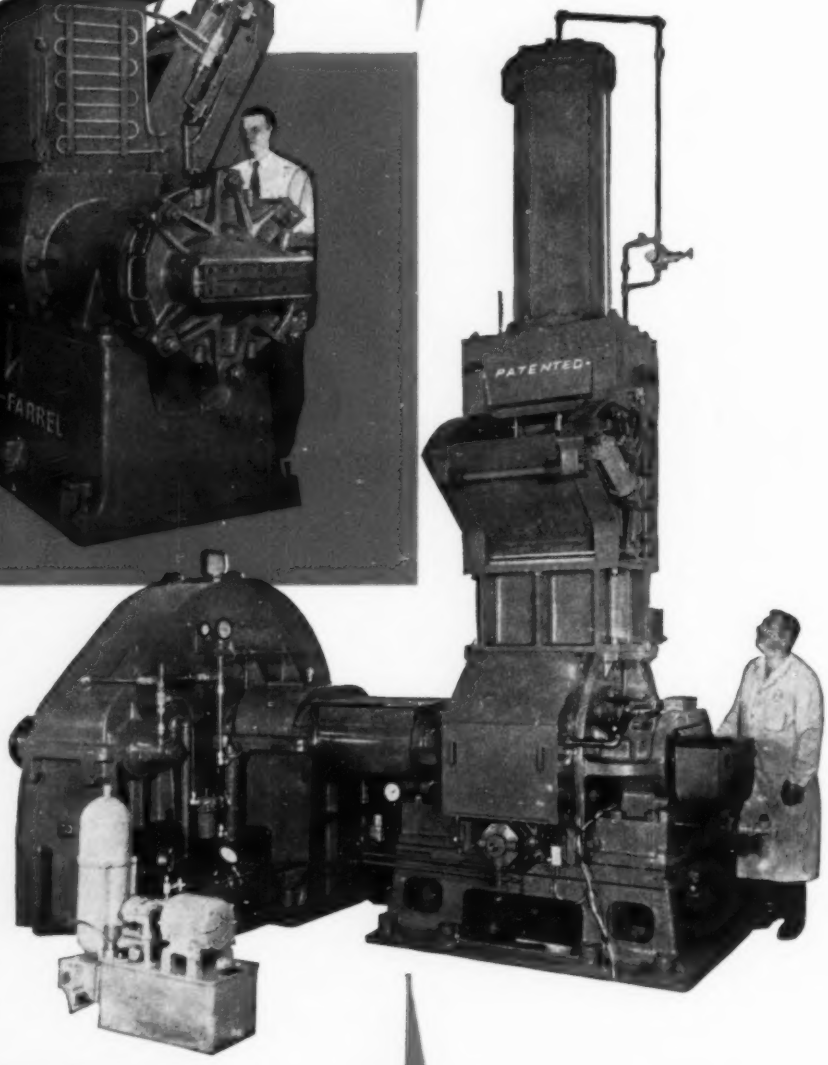

(Illustrated above)

PLASTICS EXTRUDER specially designed to automatically receive and extrude the batch from the BRIDGE-BANBURY MIXER under ideal fully controlled thermal conditions and continuously produce strip or rod form from BANBURY MIXER cycles as low as 2 minutes. Such combinations of machines have been designed and developed for various types of plastics and rubber and are the result of a vast background of experience and factory performance in modern methods of manufacture.

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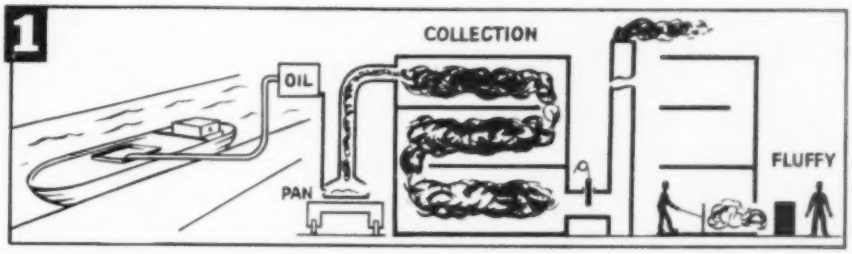
Magecol 888 BEADS

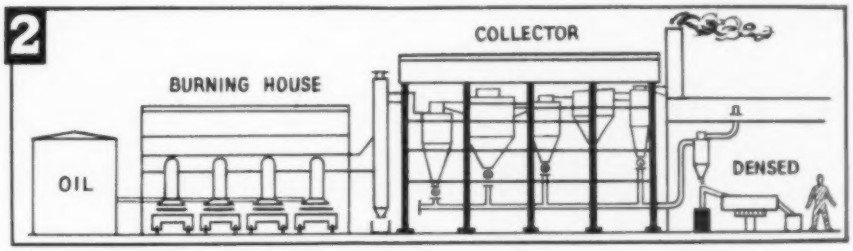
(Manufactured by Columbian-General Blacks Ltd.

1918-53



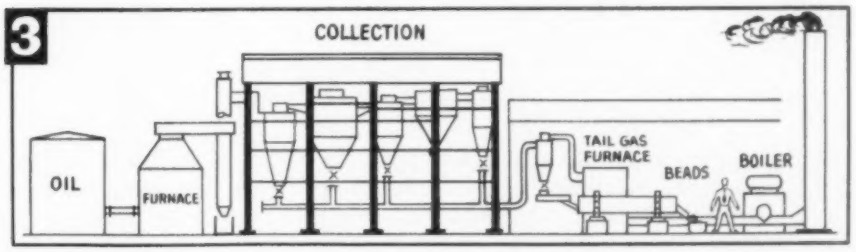
Manufacture began on the site of our present works at Four Ashes in 1918. Coal Tar distillate oils were delivered by canal barge and were burned in a cast-iron pan under a bell-shaped hood. Smoke passed 600 feet through a series of tunnels to be deposited on the floor of a settling chamber. Once each 24 hours the process was halted while men entered the settling chambers to extract and bag the fluffy black in hessian sacks.

1953-57



Early in the '50s the gravity process was abandoned in favour of a modern 8-Pan Collector Unit embodying cyclones and an electrostatic precipitator. Pneumatic Conveyors now carried the product which was, at this point, available as a densed or fluffy powder.

1957



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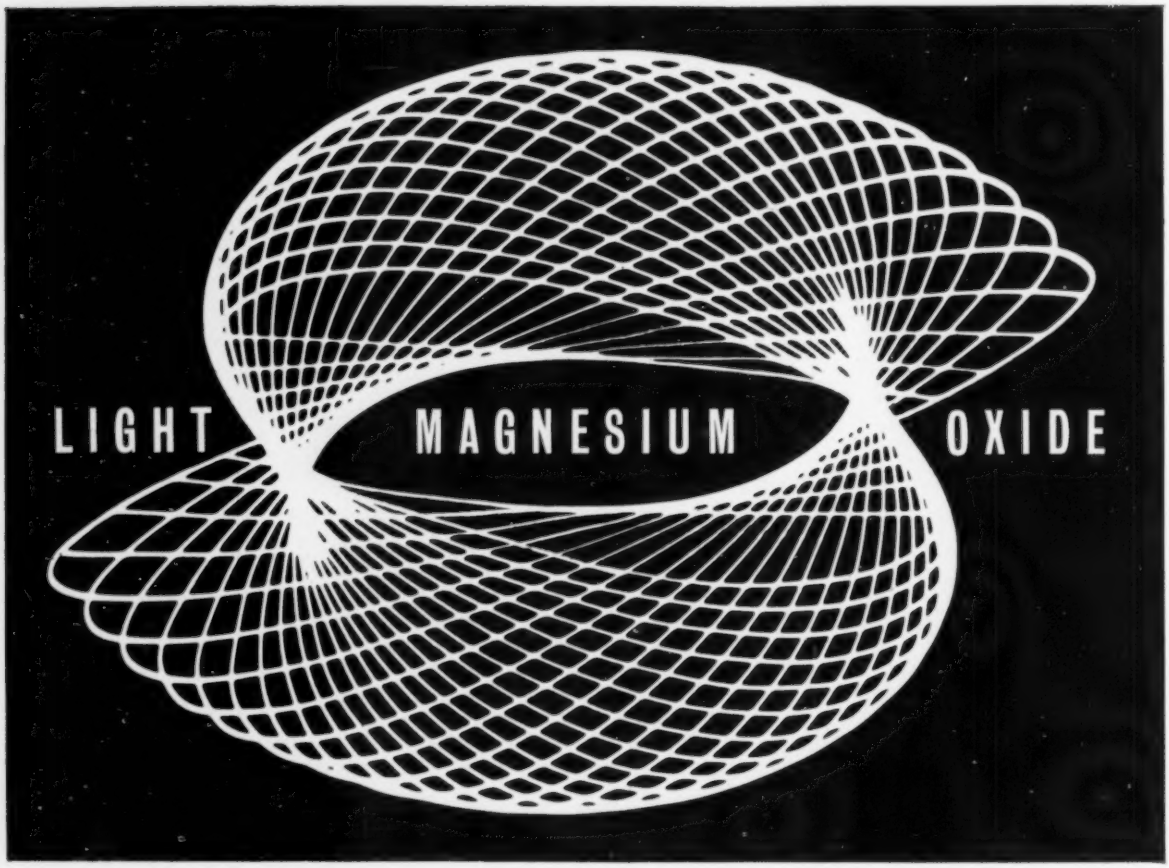

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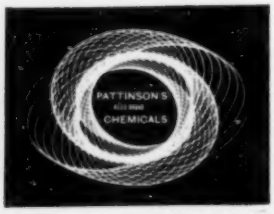

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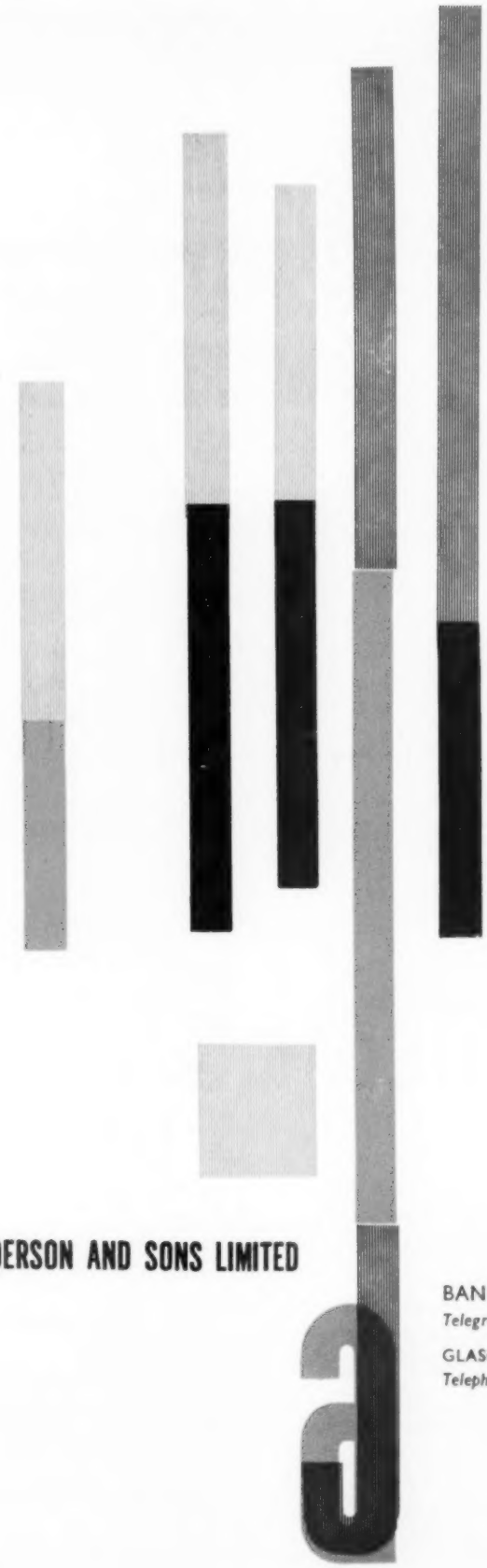

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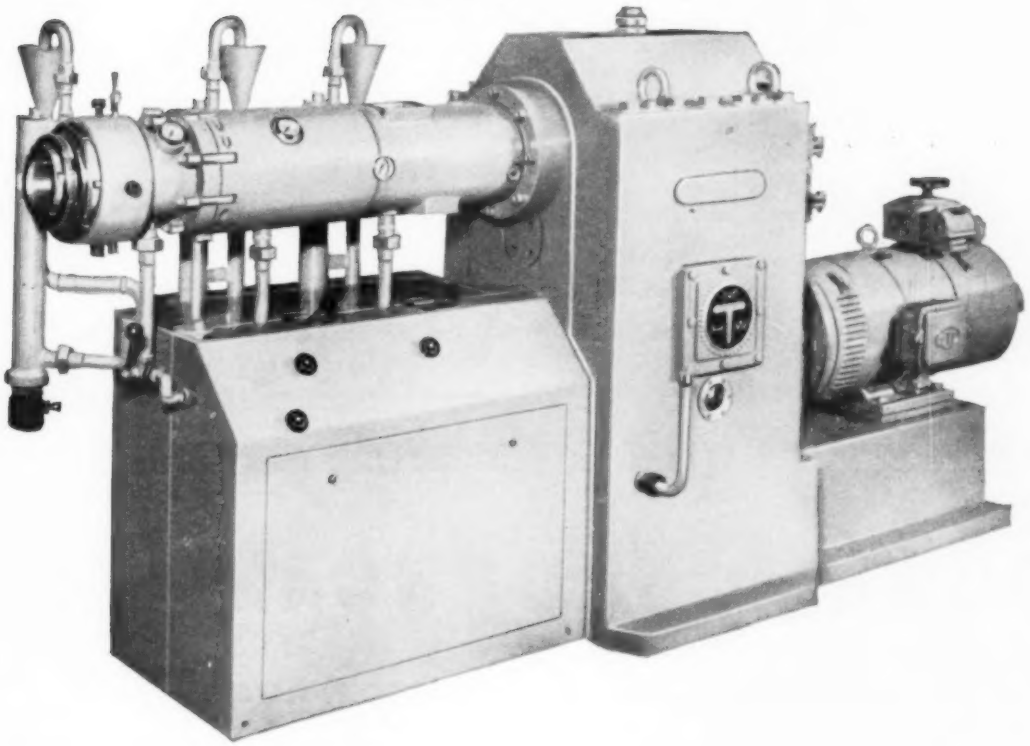

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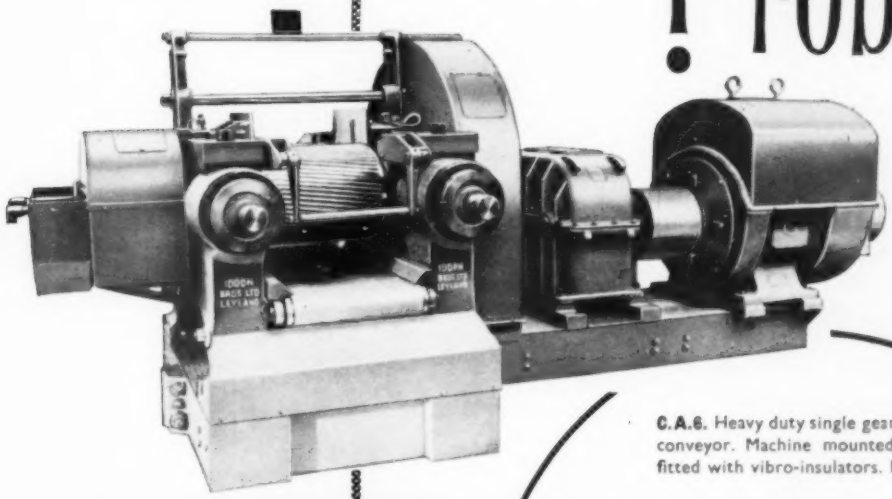

C.A.6. Heavy duty single geared Cracker with take-off conveyor. Machine mounted on fabricated subframe fitted with vibro-insulators. Rolls 20" diameter.

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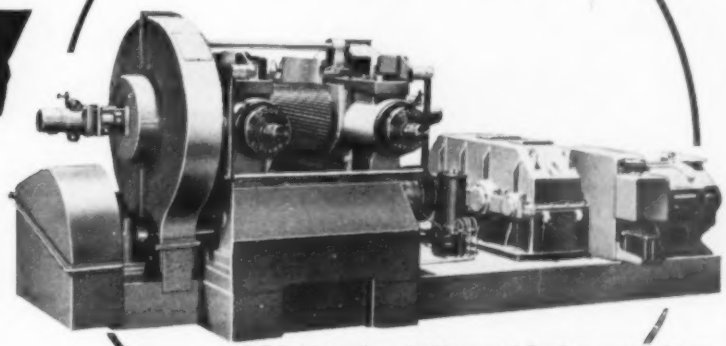

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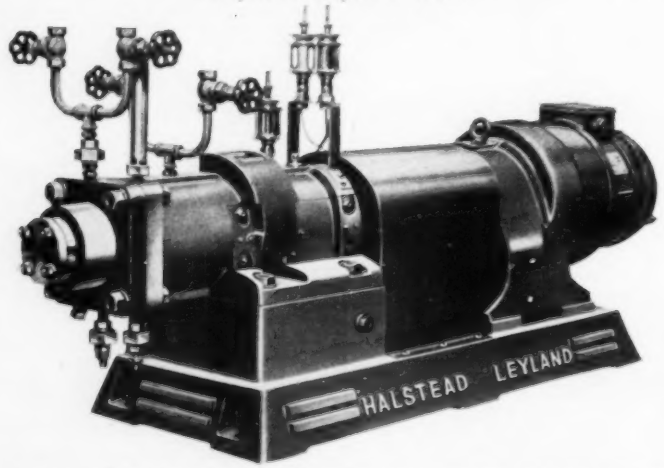

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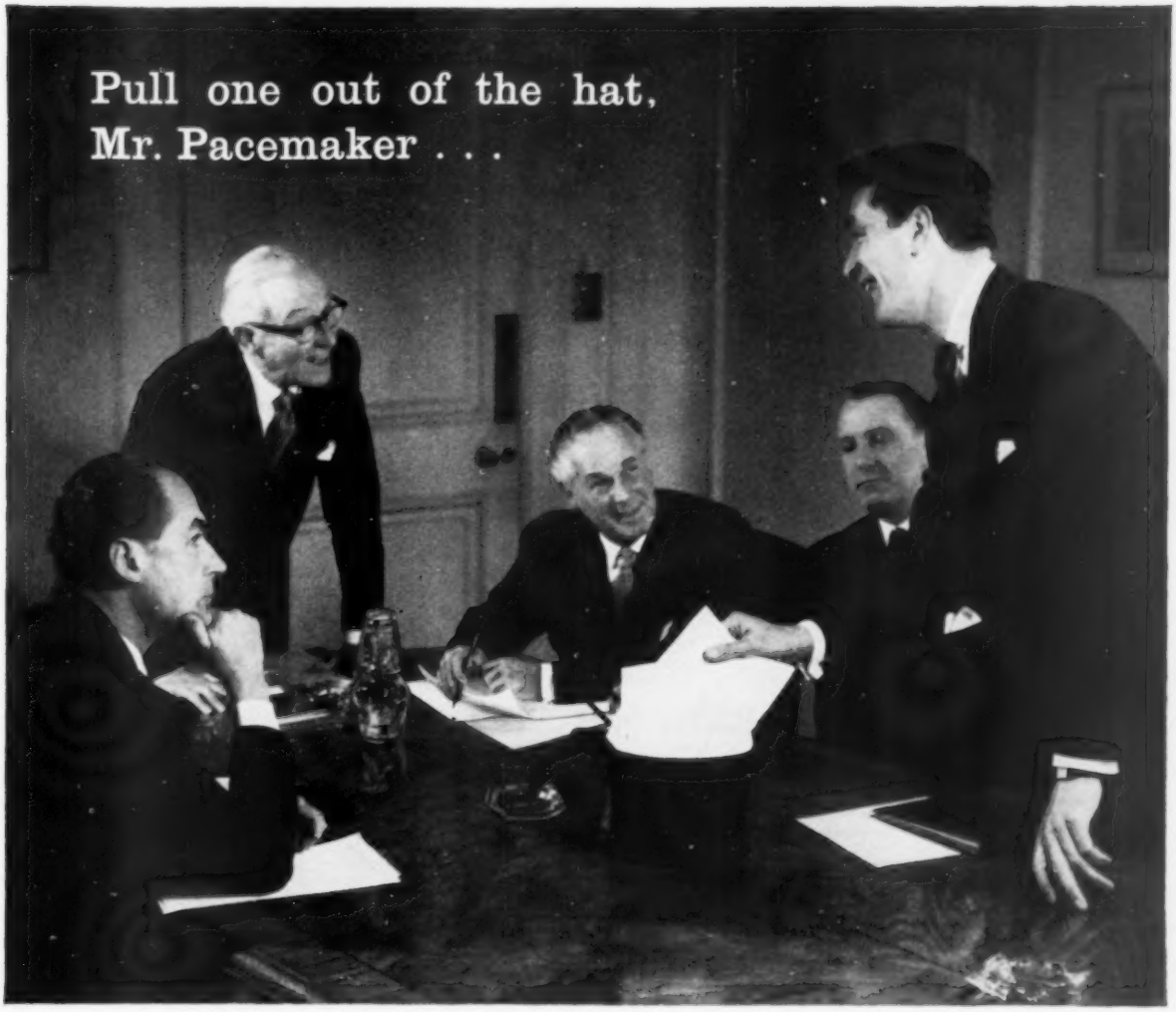

. . . show 'em a price from Phoenix!

Imagine it. Management meeting. General Manager speaking. "Referring to our last meeting, it looks as though we must very reluctantly turn down the enquiry from Willards. Their cost ceiling is rather low . . ." *Here's your chance! A slight clearing of the throat to attract attention, then speak.* "Err-mmm. Excuse me if I interrupt, Mr. Matthews. Since our last meeting, I have followed up a lead, and I am now very happy to inform you that I have a price for the rubber compound which will allow us our usual profit margin on the components, and still keep us below Willard's ceiling." *Ah! that's got 'em. Old Matthews doesn't seem to believe it . . . pass him the quotation. That know-all Skinner looks really put-out. Chairman's nodding the way he always does when he's pleased. Tell them the rest.* "Firm called Phoenix Rubber Co. Ltd. Seem to be an—er—elastic sort of organisation. Geared to handle the special mixes we want at an economic cost. Yes, Mr. Matthews, I'll have the representative call tomorrow. Thank you sir."

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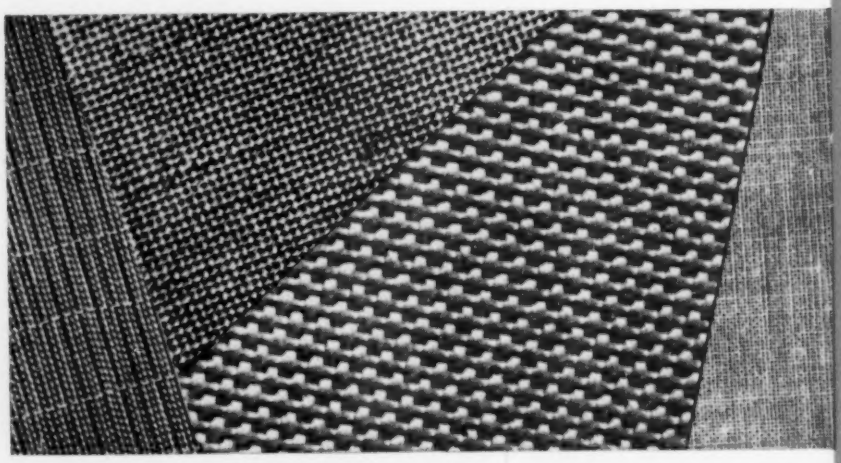

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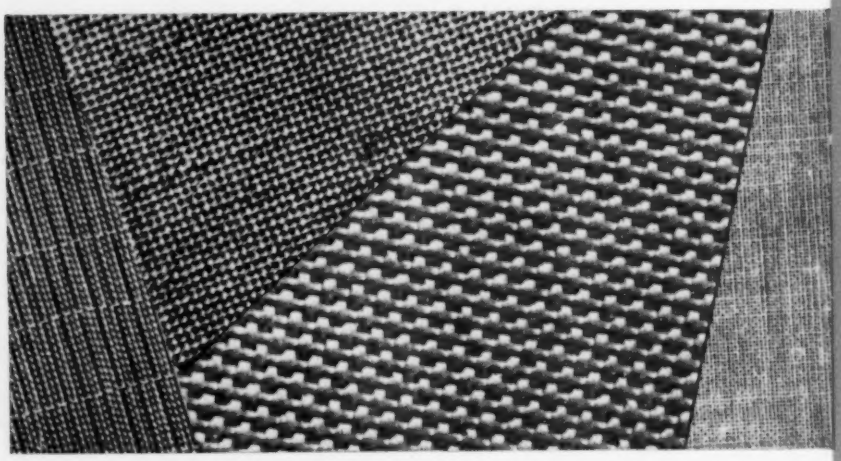

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Volume 141 IN ITS 78th YEAR No. 7

August 12 1961

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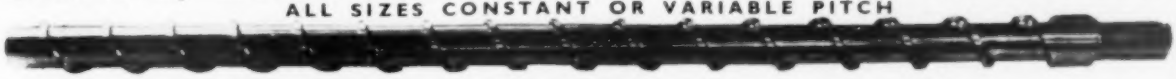

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Rubber and Plastics Weekly 8/61

NOTES of the WEEK

Flexibility

A WORKMAN may be stolid, sensible, responsible, hard-working, and once this was enough. But now he must add another quality — flexibility. In highly technological industries, such as the rubber and plastics industries, some technical changes may mean redundancy, and current economic thinking, however coloured, favours increasing mobility of labour. Redundancy is an unfortunate, emotionally loaded word which is often used in the wrong way; it is important to remember that it is the job that is redundant, not the man. If the man has the necessary skill and the adaptability, quite often the change will not mean that he loses his job, but that he transfers from one job to another.

The fact that the worker's desire for job stability must be reconciled with his employer's equally natural desire for flexibility is recognized in a new Ministry of Labour booklet, published last week.* This describes the practices in a number of firms which have adopted redundancy policies, and arrangements made by a number of employers' associations. There are many ideas on the subject, but generally there seem to be three basic objectives: to prevent redundancy by the forward planning of labour requirements; to make advance plans for dealing with possible redundancy — and to make sure that the workers know what they are; and to make special provision to reduce the hardships caused to individuals.

Most of the arrangements are the usual ones: restriction of recruitment, for example. But what is really needed is often missing — an encouragement to workers to learn outside their jobs even when there are no changes planned. There are obvious difficulties in training and production, but these must be more than compensated for in the end by an increased suppleness of operation and by a worker who works better because he has some idea of what is happening on the other side of his moulding machine. This is the heart of the matter. For mass production we have split manufacturing operations into a number of pieces; now we must realize that although it may still be only one workman to one piece, he must have some idea of what the other pieces look like.

Emphasis on Extinction

RESEARCH into flame-resistant materials is always in progress. Flame-resistant clothing has received much attention and there is an increasing emphasis on self-extinguishing material for buildings. Attempts have often been made to produce a flame-resistant rubber, but the development of this property has normally led to a loss of other desirable properties. An interesting new method of increasing the flame resistance of natural rubber has been developed by the Natural Rubber Producers' Research Association at Welwyn. The method, described by T. D. Pendle in the Natural Rubber Bureau's *Rubber Developments*, is a chemical one, as opposed to the more usual physical approach of loading the rubber with materials such as borates and ammonium salts. The rubber molecule is modified by treating the rubber in latex form with trichlorobromomethane. Addition takes place at a double bond; since for each double bond sacrificed four halogen atoms are added, a rubber can be produced which contains a good quantity of halogen and yet retains a high proportion of double bonds — so that vulcanization can be carried out in the normal manner.

One of the applications of this flame-resistant latex — designated FR latex — is latex foam. An FR 20 (20% $CBrCl_3$) latex was used at NRPRA to produce a self-extinguishing foam that showed an appreciably higher load bearing capacity than a natural foam. As might be expected, however, it showed a loss in other physical properties, but the indications are that the percentage loss of modulus after compression flexing and the compression set should be adequate to pass most specifications. Work is still in progress on the FR rubbers, but so far as the foam applications are concerned, they should provide manufacturers with the opportunity to make upholstery fillings in fields where extremely good flame-resistance is essential — for example, in ships, trains and aircraft.

Contracting to the Limit

THE salesman's most awkward dilemma must be the moment when he is offered a very large contract which he is not sure that his company can fulfil. Of course, it means a long production run — but the company has other customers to think of as well. This problem must have faced Vitafoam Ltd., when it received a large order from the Army last February for 67,000 latex foam mattresses. The company's factory, like so many others, was apparently working to capacity. On page 259 there is a report on how the problem was solved — or rather prepared for. At a time of big and little budgets, when we are all being exhorted to produce more with the same plant and equipment, this is an illustration of what can be done — when the pressure is on.

*Security and Change. Published by HMSO.

NEWS *Briefs*

DOW'S SPANISH PETROCHEMICAL COMPLEX—NEW TYRE FROM FIRESTONE — SWEDISH PATENT FOR GENERAL TIRE—CZECHOSLOVAKIAN EXPANSION

●**United States** — The Firestone Tire and Rubber Co. has developed a new Champion passenger tyre that will be available in a full range of sizes in both nylon and rayon cord construction. The tyre will be the first economy-priced one to incorporate a precision-bladed tread design, a spokesman said. The design features four ribs of 'S' shaped tread bars arranged in a rope-like pattern around the tyre.

●**Spain** — The production capacity of the permit granted by the Spanish Government to Dow-Uniquinesa SA for its projected petrochemical complex in Spain will be 10,000 tons of high pressure polythene, 6,000 tons of low pressure polythene, 12,000 tons of styrene monomer, and 8,000 tons of polypropylene. The company's plant will be located in Somorrostro, Viscaya, near Bilbao. Dow-Unquinesa is an associated company of Dow Chemical Co. of Midland, Michigan, USA. Last year Dow acquired 50% of the shares of the Spanish company, which manufactures a wide range of chemicals and plastics.

●**Canada** — The new Vulcacel BN plant of Canadian Industries Ltd., located on the site of the company's Hamilton, Ontario, works, is now in commercial production. Vulcacel is used as a blowing agent for foamed rubber and plastics, and the plant is the only one of its kind in Canada and is capable of meeting all Canadian requirements. The major outlet for the chemical in Canada is the footwear industry, particularly for rubber soles and heels.

●**United States** — The General Tire and Rubber Co. has stated in Akron that it has been granted a patent by the Swedish Patent Office for its oil-extended rubber. After much controversy, General Tire was granted a patent on the process by the United States Patent Office last year.

●**Italy** — Houdry Process Corporation of Philadelphia and Compagnia Internazionale Generale Industriale have formed a jointly-owned company to manufacture and sell polyurethane foam and foam products. The new firm, Montecassino, SpA, is based in Cassino, southern Italy. Manufacturing operations are expected to start late this year. This is the second European joint venture made by Houdry in the past ten months. In September, with Chemische Werke Hüls, it formed Katalysatorenwerke Houdry-Hüls GmbH, to manufacture and sell catalysts. Houdry has been active in the urethane foam market for the past three years through the manufacture and sale of Dabco (triethylenediamine).

●**United States** — Orders for approximately $5½m. worth of tank tracks and wheels have increased the Firestone Tire and Rubber Co.'s defence sales in the last five weeks to more than $12m. The tracks and wheels will be manufactured at the Firestone Industrial Products Co. plant in Noblesville, Indiana. The company is also working on large defence orders at Akron, New Bedford, Massachusetts, and Magnolia, Arkansas.

●**Malta** — Two further applications for the setting up of industries for the production of hand-made jewellery and plastics mouldings, have been approved by the Aids to Industries Board. The advantages offered to new industries continue to attract numerous applications for aid from the Board from a varied range of companies.

●**Switzerland** — A new research complex has been opened at Versoix by the Union Carbide subsidiary, Union Carbide International. Much of the work to be done in the modern laboratory unit will be concerned with developing new and improved uses for plastics, particularly polythene, polystyrene and vinyls.

●**Czechoslovakia** — Plans for the expansion of the rubber and plastics industries in Czechoslovakia include the erection of two new plants for the production of synthetic rubber and the introduction of manufacturing facilities for polystyrene and polythene. Total production of plastics is expected to reach 197,000 tons in 1965. Production of synthetic fibres in that year will be about 25,000 tons.

●**Italy** — Contracts have recently been signed between ENI and the Italian Government covering projects worth more than 90 milliard lire. These include the construction of an oil pipeline system and a plastics and synthetic rubber factory.

●**France** — A plant to produce vinylidene chloride copolymer is being built at Tavaux by Solvay and Co., Brussels. Production is due to begin in 1962.

'Communist!' — 549

Deane's Underwater Salvage Apparatus

If your firm is losing valuable solvent by allowing it to escape to atmosphere, it's time you or someone with your sense of responsibility suggested solvent recovery by Sutcliffe Speakman. They can tell you how to recover solvent – water-miscible or otherwise – at a profit. If it can't be done *at a profit*, they will say so. There are more pieces-of-eight in this idea than you may realise.

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Blaze at Vitafoam

THREE FLOORS DESTROYED AT DON MILL

A FIRE which broke out in the early hours of Saturday morning (August 5) destroyed the top three floors of Vitafoam Ltd.'s Don Mill factory at Middleton, Lancs. The three floors contained offices and finishing and stock bays.

The moulding plant, driers and all stocks of mouldings and patterns were undamaged.

Despite the extensive damage caused by the fire. Vitafoam Ltd. expect the Don Mill to be back in production within six to eight weeks

Emergency Services

Only a short time after the fire mouldings had been moved to another of the company's factories — Glen Mill — and were already in production. Vitafoam says that this will enable it to maintain emergency services.

The company adds that carpet underlay, glass fibre mouldings, rubber webbing and other products produced in its other three mills are in no way affected as 'Vitafoam's policy of decentralization by which production is split between the various mills will ensure that the plant is working to 50% capacity by the end of this week'.

Don Mill is expected to be back in full production within six to eight weeks. The full extent of the damage has yet to be estimated.

The company's £470,000 order from the Army for foam mattresses is unaffected. (See page 259.)

GSA Sales Still at Low Level

The General Services Administration in Washington has announced that sales of crude natural rubber from the US national stockpile of strategic materials in July totalled 1,127 long tons.

The agency sold 708 tons of rubber during the month of June.

GSA said that approximately 111,244 long tons had been sold from October 16 1959, when sales began, up to July 31 1961. The agency added that of the rubber sold between July 1 and 31, delivery from Government warehouses was scheduled as follows: July 1961, 465 long tons; August 1961, 544 long tons; September 1961, 88 long tons; and October 1961, 30 long tons.

Fluorocarbon Film Price Cut

Prices of Teflon FEP-fluorocarbon film have been reduced by Du Pont de Nemours International SA by $3 a lb. The price move, the second within six months, is primarily the result of a recent reduction in the price of 'Teflon' FEP-fluorocarbon resin by Du Pont.

Following the reduction, the price of FEP film two-mils (0.05mm.) or thicker now stands at $10 a lb. One-mil (0.0254mm.) film is $11.50 a lb. and half-mil (0.0127mm.) $15 a lb.

Cementable Type

The film can be heat-sealed, thermo-formed, and melt-laminated to various substrates. A cementable type, one side of which may be cemented to other surfaces with common adhesives, was introduced commercially late in 1960. This new film may also be used without adhesives to provide a printable surface on spiral-wrapped, heat-sealed jacketing for wire and cable.

The film is being used as insulating material for capacitors, flat flexible cable, high-performance coil-wound devices, wire and cable, and printed circuits. Other uses include as a release surface for moulds and rolls; as a corrosion resistant liner for pipe and containers; in bladders and cells for jet and missile fuels, and in protective clothing.

Rubber Conference in Paris

THE Institut Français du Caoutchouc is organizing, under the aegis of the International Rubber Research and Development Board an International Rubber Conference to be held in Paris from May 14-18 1962.

This meeting has two objects in view. To discuss recent progress in natural rubber technology, and to draw a comparison between natural and synthetic rubbers and forecast their future relative positions in the rubber industry.

The conference will be divided into six sessions, the general scheme of which is as follows:

1st session: rubber in the world economy and the respective positions of natural rubber and synthetic rubbers.

2nd, 3rd, 4th sessions: the progress in production and knowledge of natural crude rubber, the latest developments of physics and chemistry of natural rubber, the improvement of the qualities of natural rubber, and the natural specialty rubbers.

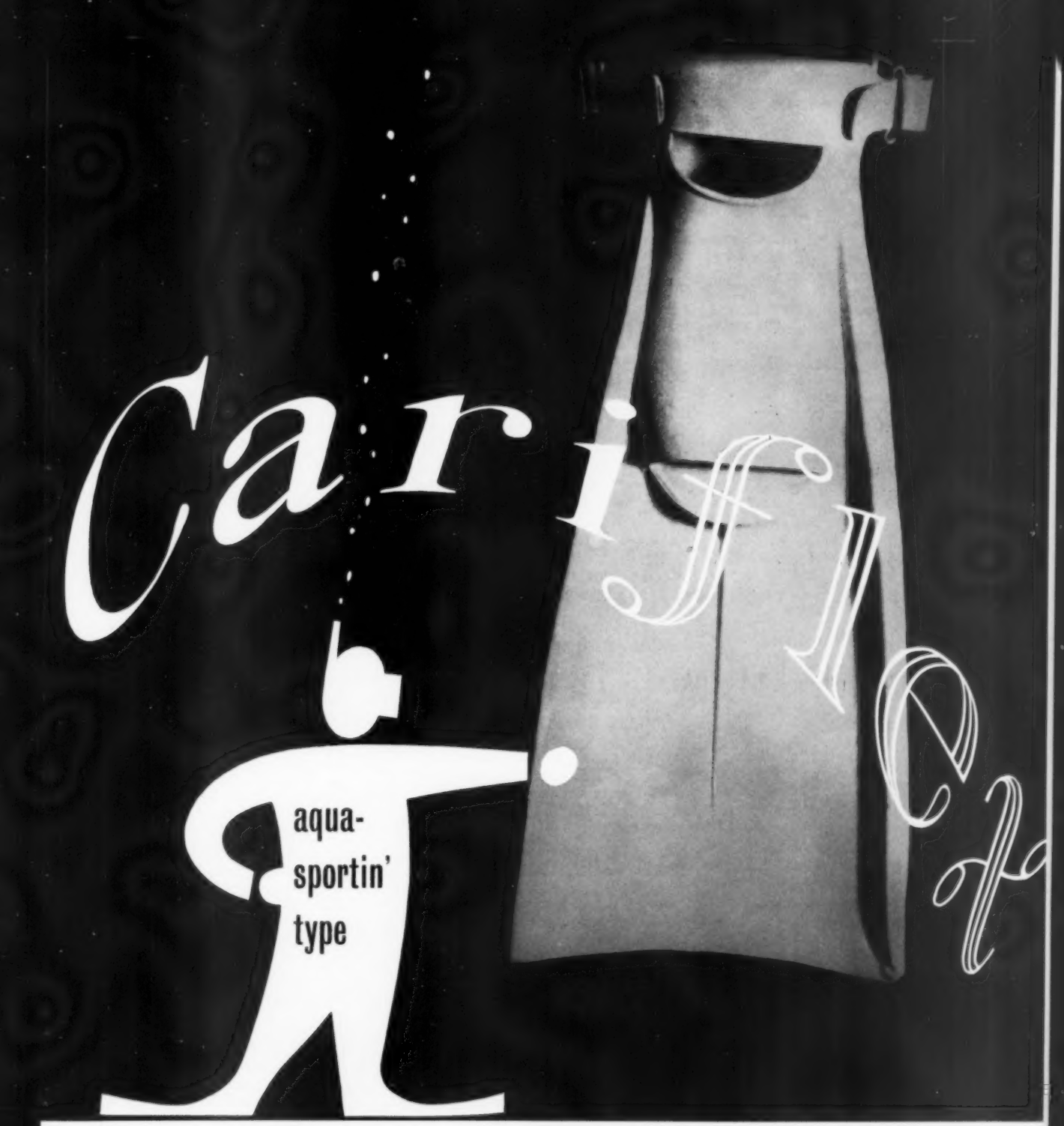
5th and 6th sessions: comparative examination of natural and synthetic rubbers. During these two sessions, accounts will be given of the main types of general purpose synthetic rubbers.

The detailed programme will be circulated during the course of October. For all information, apply to the Secretariat of the Conference, c/o M. G. Daugy, 42 rue Scheffer, Paris 16.

Heater Panel

A new type of domestic heater panel moulded from Durestos resin impregnated asbestos, has been developed by Turner Brothers Asbestos Co. Ltd. It incorporates an electrical heating element provided by Thomas French and Sons Ltd. A 2ft. x 2ft. panel emits 80-90°C. at 500 watts.

Turners do not intend to market a finished product, but the information obtained from the development work is available to possible manufacturers.



'Cariflex'-clad skin divers plumb the fishy depths—propelled by 'Cariflex' swim fins. The light colours of 'Cariflex' SBR types S1502, S1509, S1707 and SP103 are perfect for gaily coloured sports gear. These 'sportin' types' make a wide colour range possible, they're durable — resist ageing and discolouration — and they're easily moulded. 'Cariflex' Isoprene Rubber is also widely applied in sports goods, particularly in gum compounds or those using non-reinforcing fillers.
For swimming and water-ski equipment, inflatable boats, lifejackets and water wings, tenniquoits and beach balls, sports shoes and football studs—and many other applications—'Cariflex' is the right rubber for the job.

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Shell Chemicals

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No Polymer Plant for UK

BUTYL FACILITY NOW TO BE LOCATED NEAR ANTWERP?

PLANS by the Canadian Crown-owned Polymer Corp. to build a butyl rubber plant in the UK have now been abandoned.

E. R. Rowzee, president of the corporation, said at Sarnia, Ontario, that the company had encountered 'certain problems and difficulties' which caused it to explore alternative European locations for the plant. He would not give details of the problems.

Swyndrecht

He said no decision had been reached on an alternative location. A report from Antwerp, Belgium, said that Polymer and Belgian authorities were negotiating for construction of the synthetic rubber plant in the nearby Swyndrecht area.

Last October, Polymer Corporation announced it intended to build two synthetic rubber plants in Europe — one to be a specialty rubber plant and the other to be a butyl rubber plant. At the time, the company expressed a preference for locating the butyl plant in the UK.

In January, the corporation announced the specialty plant, valued between $10-12m., would be located in Strasbourg, France.

'Since approximately 70% of Polymer's production is sold overseas', Mr Rowzee said, 'the odds are high that in time we would lose a substantial portion of our present strong position in the export market if we attempted to serve this market solely from manufacturing facilities located in Canada.

'Loss of these markets, or any significant portion thereof, would lead to a lower level of rubber production in Canada'.

Mr Rowzee said the increased Canadian demand for rubber — in the order of 5% per year — could not take up the slack caused by any loss of European business. He termed the company's investments in European plants as insurance protecting the Canadian operations.

Plant Lining Officials

The new chairman of the plant lining group of the Federation of British Rubber and Allied Manufacturers for 1961-62 is F. D. Wayre (Dexine Rubber Co. Ltd.). Vice-chairman is F. C. Wilks (BTR Industries Ltd.), and the chairman of the technical panel J. T. Hull (Dexine Rubber Co. Ltd.).

Scottish Agent for Novadel

Novadel Ltd. has appointed A. J. Genmill and Co. Ltd., 29 Elmbank Crescent, Glasgow, C.2, as agents for the sale of Novadel products in Scotland. These are sold to the plastics, paint, printing ink and allied industries.

It is also intended to maintain a stock of some products, including white lead, stabilizers, organic peroxides and accelerators, in Scotland in order to reduce delivery time.

32 Rue Joseph II

A European office of the International Institute of Synthetic Rubber Producers has now been established at 32 rue Joseph II, Brussels 4. Telephone: 18.44.40 (*RPW* July 22, 114).

The Institute — head office 45 Rockefeller Plaza, New York 20 — was founded in November 1960 and now has 16 member companies in Europe, Japan and North America.

All Purpose Mastic

An all-purpose mastic, suitable for all general sealing work, has been developed by Evomastics Ltd., a subsidiary company of Evode Ltd., of Stafford. It is retailing at 3s. 9d. a tube.

First from Stokes UK

THE first machine to become available in the UK as a result of the formation of the British subsidiary of the F. J. Stokes Corporation of Philadelphia (reported in *RPW* July 8, 41), is a 25-ton automatic transfer press.

This low-cost air-operated press, Model 725, is of a very simplified design and is intended as a low-cost unit for short production runs where low mould costs and quick set-up are desired with labour-saving advantages of fully automatic moulding. It will be manufactured for Stokes by Thomas White and Sons in Paisley.

Operating with direct powder feed by an easily adjustable three-station rotary feeder, the press can be quickly converted to automatic transfer moulding from automatic compression moulding with controls arranged to operate continuously on a fully automatic basis; or intermittently on a manual or semi-automatic basis.

Transfer force is obtained by means of a separate air-cylinder, whose pressure can be adjusted independently of the clamping pressure. Both top and bottom ejection systems are supplied and an air-operated blow-off device to clear the ejected pieces from the moulding area. Clamping pressure is 25 tons, transfer force 5½ tons, and moulds up to a maximum size of 11in. by 6in. can be accommodated, yet the press requires a floor space of only 29in. by 36in.

This machine is especially economical for moulding extremely small parts such as electronic components in small moulds on an automatic basis — parts which would otherwise run on a larger press in a multiple-cavity mould, with consequent higher tooling costs and higher press-time charges.

T. L. Garner to Deliver Swinbank Lecture

T. L. Garner, managing director of Precision Rubbers Ltd., Bagworth, Leicester, will give this year's Swinbank Lecture at the Purchasing Officers Association's 1961 conference at Brighton (September 28-30).

The Swinbank Medal is awarded annually for outstanding service to the purchasing profession. Mr Garner, a past president of the association, and the current president of the European Federation of Purchasing, will talk on 'Taking Stock'.

The opening address at the conference will be given by the Right Hon. Edward Heath, M.P., Lord Privy Seal, who will talk on the Common Market.

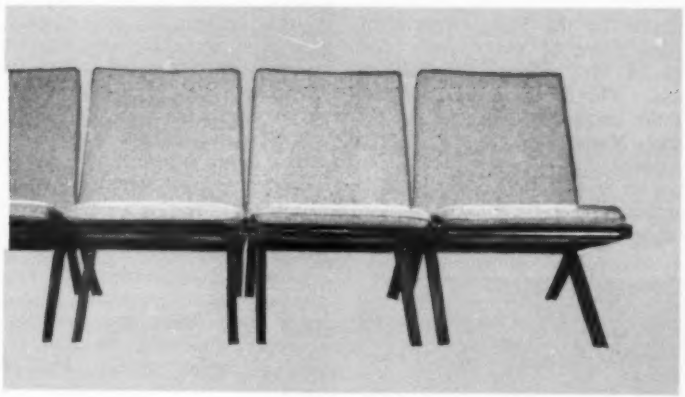
The problem of 'Late Deliveries' will be aired by Dr E. N. Hague, purchasing manager, Shell Petroleum Co. Ltd., who will present a paper on this subject and take part in a discussion with Norman Fraser, chairman of the British Chemical Plant Manufacturers Association.

Asian Links

Malaya, the Philippines and Thailand have established an association for closer economic and cultural co-operation among South-East Asian states, it has been officially announced in Bangkok.

The organization has been named the Association of South-East Asia (ASA). Its aims include co-operation in research and trade, and a combined study of the problems of international commodity trade.

INTEX IN FURNISHING



INTEX in mattresses, pillows and upholstery is durable and comfortable. INTEX is hygienic, odourless, doesn't sweat or lump. Use INTEX in bedding. It is consistent in quality, stable in price, punctually delivered from stock and backed by I.S.R.'s efficient and reliable Technical Service which will give full details and any advice.

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AMERICAN LETTER — from Norman L. Hewitt

SPI Forecasts for Plastics

LEGISLATION FOR TYRE INSPECTION

THE recent conferences at the New York meeting of the Society of the Plastics Industry provided a rostrum for many interesting predictions for new plastics products. Among these, applications in the packaging field will include paperback books and market produce wrappings in greatly increased amounts, which will help to raise plastics present 4% share of this seven billion dollar market to 8% by 1965. Packaging now consumes three-quarters of all polythene produced, and according to Vincent McCarthy, director of plastics sales for US Industrial Chemicals Co., this ratio will hold for the next few years. However, notes of realism were sounded by Mr McCarthy when he observed that predicted 1965 consumption of 1.7 billion lb. can already be met by 1961 capacity, and by T. H. Risk, of the Ford Motor Co., who spoke with reservation on the use of plastics as structural components of automobiles. Notwithstanding his exciting prediction of 45lb. of plastics per car by 1965 (today's use is 25lb.), Mr Risk stated that the decline in properties of plastics at elevated temperatures must be overcome before they will be completely acceptable for structural uses. Both rigidity and strength now decline excessively at high temperatures; a relatively large coefficient of expansion and poor low temperature impact strength are equally undesirable. These detrimental factors for automotive structures are easily recognized as among those which have thus far prevented plastics entry into that other mecca for materials producers, the construction industry.

Four methods of improvement — all quite familiar to polymer technologists — were suggested: (1) new polymers; (2) blending or combining present polymers to improve physical properties; (3) development of fillers and reinforcing materials to give more strength and lower thermal expansion; (4) combining of materials during fabrication which will result in the functional improvement of a specific part.

Safety on the Roads

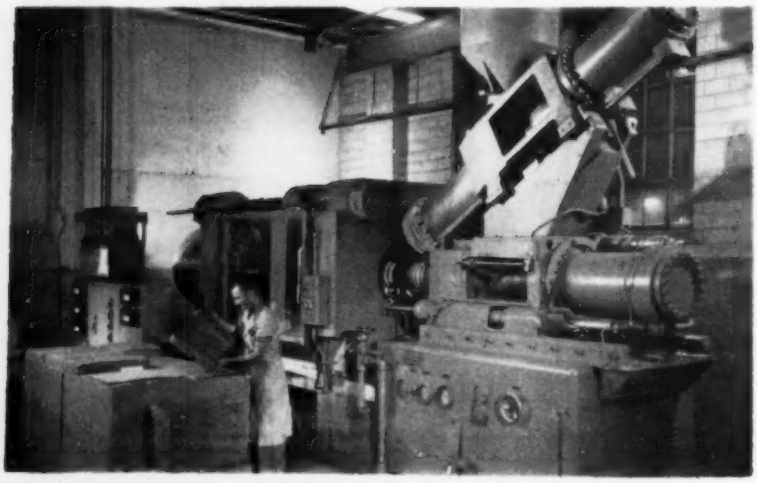
In a new effort to reduce the appalling highway accident rate, the Illinois House of Representatives has introduced a measure which requires inspection by the State Department of Agriculture of every grade and brand of tyre offered for sale in Illinois. This proposal has not met with the unqualified approval of the Rubber Manufacturers' Association, who noted that factors affecting the tyre *after* its sale are as important as construction in its performance. The end-of-session rush to pass a large number of other measures will probably leave the tyre inspection legislation unresolved. One is inclined to agree with the RMA that this approach to highway safety is quite impractical. For example, a construction specification a few years ago might have required a minimum of four plies. Today the two-ply tyre makes such a stipulation ridiculous. Laboratory tests are equally unsatisfactory as a measure of safety. The only 'unsafe' tyre is the misused tyre and this was the very argument stated in last year's Goodrich campaign against the dangers of high-speed turnpike driving with third line tyres. Ultimately, the driver's regard for safe speeds is the determining factor.

Speaking of the two-ply tyre, a good measure of its advance in the industry is the announcement by the RMA Retread and Repair Materials Committee of a new booklet on the proper methods of retreading two-ply passenger car tyres. The appearance of this bulletin is undoubtedly in answer to some industry misgivings on the vulnerability of two-ply tyres to damage during the buffing that precedes retreading.

Although all the major tyre companies have supplied two-ply tyres for original equipment, US Rubber has been most active. Since early in 1958, US has sold more than 500,000 two-ply passenger tyres for both original and replacement markets of standard and compact cars. The compacts have been the first to be equipped, following the lead of the small European models. Half of all Ford Falcons now use two-ply tyres, and by 1962 the adoption of the new construction will be complete.

Design differences start with the heavier cord used for two-ply tyres; the usual 1,650-denier rayon has been increased to 3,300. Cord angles have been lowered, and rubber compounds changed in undisclosed respects. One possible compound change could arise from the lower running temperatures of a two-ply tyre, which allow more latitude in heat build-up in the rubber components.

The advantages of two-ply construction to the producers lie in faster production and greater adaptability to automation than would be possible with four-ply types. The



Injection-moulding machine on which Amos Molded Plastics produce polypropylene luggage. A set of eight moulds is used to produce articles with a pebble-grained texture almost indistinguishable from leather

result will eventually be lower prices. In terms of performance, a softer ride accompanied by improved petrol consumption is claimed; there is no sacrifice in strength and durability.

Despite their advantages, two-ply tyres should add to the profusion of types and sizes of tyres already baffling motorists. What with tubeless and tubed tyres, rayon- and nylon-cord tyres, dual-chamber and one-chamber tyres, premium and cut-rate tyres — all in sizes ranging from 13in. to 16in. in diameter — car owners find it increasingly difficult to select the tyre of their choice. At the same time, tyre dealers have had to add storage space to handle new lines.

And this is not the end. US Rubber concludes a Press release with a note that its European affiliate, Englebest, SA, is already producing one-ply rayon passenger tyres.

New Materials

A long-awaited latex, Butyl 80-21, has recently been made available by Enjay Chemical Co. It is described as a 55% solids, chemically stable emulsion of butyl rubber in water. This is reportedly the same material which, through its use in tyre cord dipping, made the manufacture of butyl tyres possible.

On June 23 the Firestone Synthetic Rubber and Latex Co. announced a price of 30 cents per lb. for Diene, a new polybutadiene rubber now being produced at the Firestone Petrochemical Center at Orange, Texas (*RPW*, July 1, 4). The new facility went on stream recently, making Firestone the first tyre company to produce polybutadiene rubber commercially.

Diene rubber was earmarked early in its development for successful blending with other rubbers in the manufacture of truck tyres to improve quality, and since has exhibited outstanding versatility in many other applications.

The Orange plant has a capacity of 30,000 long tons a year. In addition, Firestone is building a synthetic plant at Port Jerome, France, which will have an annual capacity of 10,000 long tons of Diene rubber per year. The Port Jerome plant, which is scheduled for completion late this year, will serve the European market. At Orange, Firestone also produces butadiene, the raw material for Diene rubber, in a closely integrated operation.

Another variation on the elastomer listing is a liquid SBR known as Flosbrene. This flowing butadiene-styrene rubber is produced by the American Synthetic Rubber Corp. in a range of viscosities from less than 500 to more than 12,000 poises.

In the Bag

Sears, Roebuck and Co. introduced this year a brand new line of plastics luggage called Forecast, unusual in that it is the first plastics luggage made entirely by injection moulding. All other plastics luggage on the market is either vacuum formed or includes only small sections which are injection moulded.

Amos Molded Plastics of Edinburg, Indiana, agreed with Sears that polypropylene would be the most suitable material for this application. After intensive study and experimentation, they succeeded in producing a polypropylene (Hercules Pro-fax 65A4) moulding that seemed to meet all of Sears rigid specifications.

A set of eight moulds is used in the machine illustrated. Each mould is used interchangeably for both sides of each luggage piece. While the original injection mouldings were produced by a valve gating method, Amos later perfected a new gating technique which, by eliminating the valves, permitted use of a simpler, more economical, mould. One of the toughest problems that Amos engineers had to solve was the tooling for the luggage finish. Customer specifications called for a leatherette finish, and such an effect is extremely difficult to achieve by hand embossing. Amos found a qualified photo-engraver who was able to etch the entire cavity without a 'break' in the pattern. The result is a pebble-grained texture that is almost impossible to tell from leather.

Spiders Web

Among the construction details of this plastics luggage, the inside divider is worthy of note. This divider, a tough moulding job with polypropylene, features a 'spider web' grid design so that the attractively etched interior design remains visible.

The three principal selling advantages of the luggage are low cost, light weight (1 to 2½lb. lighter than other luggage on the market) and mar and stain resistance (a few buffs with fine sandpaper or steel wool will remove scratches). The customer also has a choice of five different colours. If Sears sales predictions for the line in the first year are realized, injection moulding may well become a standard method of luggage manufacture.

Wheels Within Wheels

A recent decision by the National Labour Relations Board indicates that American Labour has achieved the ultimate — the formation of a union within a union. The employees of the International Ladies' Garment Workers have been granted the right to form their own internal union so that they may bargain with top echelon labour bosses for improved wages. The specific complaint of the dissident unionists was that their $65 weekly pay falls far below the ever-increasing wage standard they have helped to create. There is precedent for unions within unions in the half-dozen such groups now existing within the AFL-CIO structure.

In his arguments against the internal group of labour representatives, David Dubinsky, president of the ILGWU, maintained that the union 'spirit of dedication' was in danger of being lost.

In the rubber industry there was no internal union news, but the new Firestone union contract showed that the United Rubber Workers were not unaware of other managerial problems. In the two-year contract a precedent was set in granting higher wage increases to tyre workers than to those in the other factories of the company.

The union noted in a joint statement that it recognized that costs in non-tyre plants may place the company in a non-competitive position and that it has responsibility in protecting job security of employees in both tyre and non-tyre plants.

Graded Rises

This innovation in rubber union-management agreements, which was also mentioned generally in the new Goodyear contract, indicates that in the future wage increases, rather than being applied 'across the board' to all employees of product divisions, will be scaled to tyre or non-tyre employment. Thus, an hourly rate advance for tyre builders would not necessarily be as much for employees in footwear, moulded or extruded rubber product plants.

'We have recognized the increasing competitive factor in foreign goods and also the companies' claim that there exists a disproportionate wage cost between tyre and non-tyre products', said a union official.

In other respects, most of the new union contracts in all product areas have been alike in providing for an eighth paid holiday, three weeks' vacation for ten years' service, and from three cents to seven cents wage increases each year under two-year contracts.

Canadian Footwear

Factory shipments of footwear by Canada's rubber products industry in 1960 increased to 15,704,996 pairs valued at $34.7m. from 14,975,951 pairs valued at $32m. in 1959, according to advance figures that will be contained in *The Rubber Industries*.

PLASTICS MACHINERY DEVELOPMENTS

Blow Moulding Up to 260 Litre Capacity

CAPABILITIES OF KAUTEX MACHINES

By JOHN SHEARING

John Shearing will be writing every week on recent developments in plastics processing machinery. He welcomes news, technical data and comments, from both suppliers and users

KAUTEX-WERK of Western Germany have announced their new programme for the manufacture of blow moulding machines, which includes one capable of blowing bottles up to 260 litres capacity. This illustrates the great progress which has been made in blow moulding techniques which are developing rapidly in the direction of automation and size.

An important point about Kautex is that they have a blow moulding factory of their own and hundreds of thousands of bottles and containers of all types and sizes are made every day. They claim to be the biggest blow-moulders in Europe, which may well be true.

As far as their machines are concerned, all the moulding experience they obtain is used to improve their own products. Moreover, their equipment is tried out on their own shop floors, a first-class proving ground.

The Kautex Range

The Kautex range is quite wide and includes five machines of different capacities, some details of which are shown in Table 1.

Two important points should be noted about the range of Kautex machines. The V8 and V18 are fully automatic and the H10, H110 and H260 are semi-automatic. This is due to the size of the products manufactured on the machines and the comparatively long cooling cycle which makes automation uneconomic. In any case, the large containers are more easily handled manually.

It should be stressed that the cycles per hour and the size of containers are both maximum. The rate of production will depend on the size of the moulding, and the maximum volumetric capacity of the container will depend on its shape. The largest capacity can be made with rectangular shapes, followed by cylindrical and round shapes.

The Blowing Operation

The parison is extruded continuously through the right-angle cross-head. It is nipped off by a suitable device and carried down between the split halves of the water-cooled moulds. These close, the parison is inflated, cooled and ejected. By this time the next parison has been formed and is being carried down to the moulds.

The Kautex V8 blow-moulding machine fitted with a triple extrusion head. This machine can produce containers up to 8.2 litres capacity

The bottles are blown from the bottom which allows a number of advantages. Most important is the mandrel over which the neck is calibrated making deflashing the only finishing operation required. Rather more even wall thickness is also probably gained by this 'upside-down' method.

The working movements such as lifting, lowering, closing and opening of the mould are oil hydraulically operated. A two-stage pump provides the necessary pressure and ensures the shortest possible dry-cycle time. The extruder stands on a platform and can be moved horizontally or vertically for convenience. Safety precautions are taken and a transparent shield in front on the platens interrupts the cycle of the machine if it is opened during the process.

Special Extruders

The extruders manufactured by Kautex were primarily designed for use with their blow-moulding equipment. They can, however, be used as ordinary extruders since they include all modern developments.

The speed of the scroll is infinitely variable over the range given, simply by push-button control. This is important since it enables small mouldings to be made on a relatively large machine, thus increasing the range. This is also increased as far as

Continued on page 260

TABLE 1

KAUTEX BLOW-MOULDING MACHINE SPECIFICATIONS

Model No.	V8	V18	H10	H110	H260
Maximum article size:					
Litres	8.2	18.2	10.0	110	260
Gallons	1.8	4.0	2.2	24.2	57.2
Maximum cycles/hour	2000	750	500	150	100
Matching extruder	S40	S60	S40/20	S60	S60
Screw diameter mm.	40	60	40	60	60
Length/diameter ratio	1 : 18/20	1 : 20	1 : 18/20	1 : 20	1 : 20
Capacity, Polythene lb/hr	88.2	265	66.2	265	265
RPM	35–185	40–150	40–125	40–150	40–150

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Rubber Workshop Practice

CITY AND GUILDS COURSE FOR SHOP FLOOR WORKERS

By D. W. HINTON, AIRI

This relatively new examination has disclosed a greater demand than was expected for training at this level. Considerable interest has been expressed in the examination by members of the rubber industry and the papers and examiners' report for 1960 were printed in *RPW* June 3, 843. The author of this article is one of the examiners for the course

MUCH has been said in recent years about the necessity for our young people to become technically and technologically trained. This was emphasized this year during Commonwealth Technical Training Week when colleges throughout the country set out to encourage training and education in technical and scientific subjects. It is important to realize, however, that such training should take place at all levels in industry and that opportunities for gaining more technical knowledge must be extended to the shop floor as well as to the higher reaches.

The course in Rubber Workshop Practice is designed for the men on the shop floor, for charge hands, foremen and any other workers in the industry who can improve themselves and their work by learning something about the fundamentals of rubber technology. This course is sponsored by the City and Guilds of London Institute and has been running for five years at various centres throughout the country.

The two most important features about the course are, firstly, that no prior educational qualifications are necessary for any would-be student and, secondly, the emphasis is on practical work. The classes consist of both lectures and practical work with examinations in each. The principal subject is elementary rubber technology with mathematics, general science and engineering drawing as related to the industry. The course is divided into two sections, taking three years altogether. Examinations take place at the end of the second year for section 1 and at the end of the third year for section 2. In order to give as wide an opportunity as possible it is not necessary for the work to be done at a technical college and the City and Guilds Institute will grant approval to works laboratories, provided they have the essential basic equipment and can provide the students with the requisite lectures and practical work. External students are therefore accepted for the examinations if they have covered the syllabus and comply with the regulations. A number of rubber companies, situated where there are no suitable colleges, have taken advantage of this.

The Syllabus

With permission of the City and Guilds of London Institute the syllabus for the course is reproduced here in full.

SECTION 1

Question paper 120/1 will be based on the following syllabus:

Wherever possible, practical work on the following subjects should be carried out during the course. The examination will give candidates the opportunity to show that they have carried out practical work or have seen practical demonstrations.

The requirements of the customer: hardness, strength, modulus, abrasion, tear resistance, ageing qualities, colour, price. Short history of the rubber industry. Plantation rubber. Latex, coagulation. Bale cutting.

Methods of mastication: plasticity; effects on processing, effect of time and temperature in mastication.

Requirements of processing and how they are achieved by basic ingredients (homogeneity, plasticity for sheeting and extrusion).

Main compounding ingredients. Reclaim. Factice. General survey of the preparation of raw materials. Methods of mixing. Description of calenders and extruders. Spreading.

Types of plant available for vulcanizing. Steam pans. Hydraulic presses. Principles of hydraulics as applied to rubber workshop practice.

Vulcanization, effect of sulphur accelerator ratio, time, temperature: connection between steam pressure and temperature. Optimum cure. Scorch (pre-vulcanization). Pressure in moulds. Mould cleaning and maintenance.

Useful workshop calculations. Conversion of batch weights, calculation of amounts of material required from weight or volume of finished article.

Specific gravity (meaning and calculation). Hydrometers. Archimedes' principle. Law of flotation. Fluid pressure. Calculation of price per pound and per cubic foot. Areas and volumes of simple figures. Calculation of percentage scrap and rejects. Graphs: *e.g.*, change in scrap percentage. Effects of heat on solids, liquids and gases.

Brief description of means of measuring and controlling temperature. Conversion of temperature scales. Latent and sensible heat treated qualitatively in relation to steam heating. Conduction, convection and radiation. Lagging.

Simple report writing.

Question paper 120/2 will comprise practical tests based on the following syllabus:

Safety rules. Raw rubber mastication. Weighing of ingredients. Mixing. Moulding of simple products from weighed blanks. Extrusion and curing of tubes. Vulcanizing. Calendering processes: (*a*) sheeting, (*b*) topping, (*c*) frictioning. Plying up belts and fitting with covers. Building on mandrels. Rollers. Wrap curing. Open steam curing. Bladders. Hollow rubber balls.

SECTION 2

Question paper 120/3 will be based on the following syllabus:

Wherever possible practical work on the following subjects should be carried out during the course. The written examination will give candidates opportunities to show that they have carried out practical work or have seen practical demonstrations.

Solvents: spreading, dipping, solvent recovery. Toxicity. Latex: stability, compounding.

Students assisting in a demonstration of the extrusion process at the Newton Heath Technical College, Manchester

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Brief description of rubber-manufacturing machinery. Reading of simple engineering drawings, involving conventional signs.

Properties of metals for moulds. Reducing valves: steam valves, steam traps.

Brief description of construction and manufacture of rubber products: tyres, footwear, belting, hose, mechanicals, hollow articles.

Use of cotton and rayon in the rubber industry. Synthetic rubbers (SBR, butyl, oil-resisting): uses, main difference from natural rubber in processing and application. Sponge rubber: blowing agents.

Principal provisions of Factory Acts affecting the rubber industry. Introduction to the principles of work study.

Question paper 120/4 will comprise practical tests involving laboratory work based on the following syllabus:

Rubber cements: effects of concentration and plasticity on viscosity. Dipping (latex and solution). Latex compounding. Latex foam, spreading and dipping. Simple physical testing: hardness (BS degrees). Tensile strength.

The Growth of the Course

Ten years ago theoretical classes were started in Edinburgh under the Edinburgh Corporation Education Committee and after three years a rubber laboratory was opened at the Wm. Ramsay Technical College at Portobello. Some of the equipment for this laboratory was donated by local firms. A three years diploma course was started and it was eventually taken over by the City and Guilds of London Institute. The popularity of this course has increased since it started in the autumn of 1956 as shown by the number of students entering for the examinations:

	Section 1	Section 2
1957	25	4
1958	22	15
1959	30	18
1960	45	26

The same pattern is shown in the number of centres at which the examinations have been held:

	Section 1	Section 2
1957	Edinburgh	Edinburgh
	Manchester	—
1958	Edinburgh	Edinburgh
	Manchester	Manchester
	Glasgow	—
1959	Edinburgh	Edinburgh
	Manchester	Manchester
	Glasgow	Glasgow
	Trowbridge	—
1960	Edinburgh	Edinburgh
	Manchester	Manchester
	Glasgow	Glasgow
	—	Trowbridge
	London	—
	Leicester	—

These classes have been held at the following colleges: Edinburgh — The Wm. Ramsay Technical College; Manchester — The Newton Heath Technical College; Glasgow — The Stow College of Engineering; London — The Northern Polytechnic, where there exist facilities for rubber study. At Leicester the practical work is done in the laboratories of the John Bull Rubber Co. Ltd., Evington Valley Mills and at the Dunlop Rubber Co. Ltd., St. Mary's Mill. At Trowbridge the practical work is held in the laboratory of the works of George Spencer, Moulton and Co. Ltd.

These rubber companies have benefited by obtaining approval from the City and Guilds Institute and have assisted in extending to their workers and staff the opportunity of learning the basic processes of the industry and obtaining a recognized certificate for the work done.

A number of rubber companies have, from time to time, supported classes and lectures on their own premises for their workers and staff and this course serves the need of providing a national standard in elementary rubber technology.

A 20-man advisory committee meets regularly to supervise the running of the course. The chairman of the committee is F. H. Cotton, MSc, PhD, FRIC, FIRI, and it includes representatives of the National Joint Industrial Council for the Rubber Industry, the Institution of the Rubber Industry, the British Plastics Federation, the Association of Technical Institutes, the Association of Teachers in Technical Institutes, the Ministry of Education and the City and Guilds of London Institute. Every attempt is made to keep the course and examinations simple and straightforward and to prevent it becoming too advanced in subject matter as the years go on. To this end the syllabus is reviewed at regular intervals to maintain a standard and to keep abreast of developments and tendencies in the industry.

The Examination

The written examination for section 1 consists of three parts, A, B and C. Part A is a one-hour paper in the form of a questionnaire; the answers to approximately 15 questions are to be given in a few words. Part B consists of six questions, of which four must be answered, and part C is of two questions of which one must be answered. The questions in part B and C take about 20 minutes each. For section 2 there is no part C, the examination consisting of the questionnaire part A and Part B with eight questions of which five must be answered. The practical examinations vary from year to year and take six hours for each section.

Some typical questions from previous papers are as given below.

'Describe two methods of carrying out mastication in the factory. What is the purpose of this process?' (Section 1, written, 1957.)

Student using the laboratory mill at the Stow College of Engineering, Glasgow

'Describe the extrusion process and state the various uses of the extruding machine in the rubber industry'. (Section 1, written, 1958.)

'The following words are used in the rubber industry with meanings different from those in ordinary use: duck, plateau, dough, perishing, bias, frosting and blooming. Write short notes on any five of them'. (Section 2, written, 1958.)

'Name a suitable solvent for use with each of the following unvulcanized rubbers: natural rubber, butyl, neoprene, SBR and nitrile. What precautions must be taken in the storage and use of these solvents in relation to (a) toxicity and (b) fire hazard?' (Section 2, written, 1960.)

'You are supplied with shrunk, unvulcanized calendered sheet, a piece of uncured tubing and a template. Make an air ring and cure for 30 minutes at 40psi. Submit the product to the examiner'. (Section 1, practical, 1959.)

'Compound 300gm. of the 60% natural rubber latex supplied, to the following formulation:

Rubber	100	dry weight
Zinc oxide	5	" "
Sulphur	1½	" "
Z.D.C. (accelerator) ..	1½	" "
China clay	200	" "
Antioxidant	1	" "

'Use the completed latex mix to cast a hollow rubber toy in the plaster mould provided. Cure in the wet condition for one hour at 95°C. and submit to the examiner'. (Section 2, practical, 1960.)

This course has now established itself and its value has been proved in filling a much needed want. It is nation-wide and provides a certificate that can be recognized throughout the industry. It now remains for employers to encourage their employees to benefit from this course.

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VIEWS *and* REVIEWS

Modest Resin Tailors

WE often say that our chemists are now so clever that they can make polymers to order if we can specify the properties we want and are not particularly concerned, in the first place, about the cost. *I/EC* for July 1961 carries a summary on pages 573-4 of a paper by J. H. Freeman and E. J. Traynor, which is one of the best examples I have seen of the skill of the tailor-chemist.

These two authors were concerned with plasticizing a phenolic resin and they wished, for reasons almost aesthetic, to do it without adding a low MW plasticizer. They wanted the polymer itself to possess the attributes of a plasticized system, reduce processing difficulties, migration, and volatilization.

Their specification was for an electrical insulator 'that is capable of withstanding necessary subsequent operations such as acid etching, soldering, vapour degreasing, and stamping or punching. There should be no blistering or delaminating and no sticking, or crumbling in the die press'.

'Phenolic resins are usually too brittle unless highly plasticized, or else pre-heated prior to punching. Hot punching is expensive and addition of migratory plasticizers is undesirable since blisters may develop during soldering operations and embrittlement may occur on ageing. . . .'

Steric Hindrance

The action of plasticizers and heat in softening phenolic resins is to reduce the secondary forces exterted by hydrogen bonds between polar centres. The authors argued that the same effect ought to be produced if the resin molecule could have added to it, between these centres, a substituent group. This is deliberately introducing steric hindrance.

Further consideration led them to desire a short substituent branch at a specific point, the phenyl ring.

That was the main argument. Other chemical hurdles had to be surmounted and finally it was decided to investigate the possibilities of using isopropylphenol in the usual formaldehyde reaction. Building a small model appeared to confirm these ideas.

Practical Results

In actual fact, the most successful results were achieved with resins based on a 2 to 1 mixture of meta- to para-isopropylphenol. It passed the various standard tests for punching quality, solder floating, vapour degreasing, electrical properties, bending without cracking or crazing, postforming when made up into a cloth laminate.

There was now available, 'for the first time', the authors say, 'a cold punching grade laminate to which no extraneous substances were added'.

Yet, so modest are they, that they point out that this practical success does not unequivocally prove the accuracy of their theory — it might be caused by some other factor!

A Coming Scientific Impasse

I am indebted to Dr Watson of RAPRA for drawing my attention to two recent papers on a problem of scientific documentation. One is by Dr B. K. Blount, Deputy Secretary of DSIR, which appeared early this year in the *New Scientist*, Vol. 9, No. 221. The other is a paper entitled 'Principes d'une Co-operation Internationale pour l'Amelioration de l'Information Scientifique' by G. A. Boutry, in the *ICSU Review*, 1960, **2** (4), 188-203. M. Boutry is Secretary of the Abstracting Board of the International Council of Scientific Unions.

They both deal with the same problem: the virtual impossibility nowadays for a specialist to keep up with all that is published in his field.

The Problem

Boutry begins rather frighteningly by claiming that at least 26,000 scientific periodicals are now published and that there is at least an equal number of occasional publications. 'It is estimated that, in 1958, some 4m. scientists, engineers, etc., had to seek the original scientific information they might require in 1m. signed articles or papers, covering 14m. pages, and written by 2.5m. authors in four main and 20 secondary languages. Thus, today, the probability of a particular item of specialized information reaching a particular reader to whom it might be useful is slight'.

A little sensational, if not overstated, this case may be, perhaps, but there is no doubt that the publication of scientific information is increasing exponentially, doubling every ten years. As Dr Blount says, 'the subject needs new ideas'. Both he and M. Boutry have them.

Abstracts and Automation

Boutry asserts that abstracting journals passed their peak of maximum efficiency about 1930; now they cover only 20 to 25% of the originals and, even then, with a time lapse of six to eight months. Scientists cannot afford to wait so long and get such a poor result. Mass production methods are called for, he thinks, which must be employed on an international scale with the basic concepts defined by competent bodies. He sees three fields in which action is needed.

(1) Improvement of the original scientific papers. 'Many scientists are unable to write effectively. It is urgently desirable to stress the importance of using simple, clear style, logical arrangement of statements and clear chains of reasoning. University studies should take account of these requirements. Some action should be taken to convince laboratory workers that diffuse, incomprehensible papers do no credit to their authors'.

The ICSU is considering a recommendation to editors of scientific journals to make a clear distinction between (a) papers containing new scientific information, (b) news, and (c) progress reports.

(2) Speed up abstracting services. His most important suggestion is the use of authors' abstracts.

(3) Development of national centres and an international organization for the exchange of information.

COMMENT ON SCIENTIFIC AND INDUSTRIAL MATTERS

by **F. C. JENNINGS**

'The publication in special volumes of papers read to international congresses, symposia, etc., should be discouraged: the papers should appear in some existing journal'.

Finally, before an automated documentation process, based on mechanical, optical, or electronic apparatus, can yield its best results there must be much more standardization of titling, indexing, key words, and so on.

A More Radical Remedy

One wonders whether M. Boutry's cure is adequate for the disease he diagnoses, and whether something much more radical, like Dr Blount's suggestion, is not required.

Dr Blount defines the problem thus: 'to ensure that a research worker has access to information on anything relevant to his work without the labour (and expense) of reading (and perhaps acquiring) a great deal of material in which he has no interest. At the same time he must keep in touch with thought and progress in neighbouring fields, and indeed in science as a whole. I suggest that the specialized scientific journals in their present form are not the best means of achieving either objective, and that they should be dropped in favour of a new method. . . .'

Briefly, his proposals are these:

(1) Research workers should continue to write up their work as papers, which (2) should be reproduced, nationally, as separates, and kept by the author, after some distribution to central libraries. (3) An international organization should periodically publish an index of titles or a journal of abstracts, on which (4) a research worker would depend for knowledge that a paper of *prima facie* interest to him existed. If he wished to read it, he would write to the author for a copy. (5) For knowledge of progress outside his immediate specialization, the research worker would rely on review articles, 'the growth of which has been a feature of recent scientific publishing!

I will comment no more on this suggestion now — except to commend it to serious attention — because it is an important subject to which I have already adverted several times and which may be worth a general summary in a few months' time.

Swedish Plastics

In the June 1961 issue of the Swedish plastics journal, *Plastvärlden*, there is a special section, in English, describing the achievements, the present position, and the hopes for the future of the Swedish plastics industry.

The population of Sweden is about 7,200,000, that is less than that of Greater London. The Swedish Plastics Federation, which was formed in 1946, now has more than 270 members. It is estimated that, as a whole, the Swedish plastics industry comprises between 800 and 900 companies, of which between 700 and 800 manufacture products. They range in size from very small firms, perhaps with a single machine operated by the owner, to large firms with a yearly output of over 10m. Swedish crowns.

Output of household and other types of consumer articles is expanding rapidly, styrene and polythene being the main materials used in these fields.

Machinery and equipment is nearly all imported into Sweden.

Raw Materials

Sweden has no natural resources of coal or petroleum, but she has ample resources of hydro-electric power which has made possible the production of urea and melamine resins and of pvc. A petrochemical industry, producing polythene and polypropylene, is planned to come on stream in 1963.

Plasticizer production is now quite considerable but many other compounding ingredients have to be imported. Glass-fibre fabrics are produced by three manufacturers, and, as might be expected in a country having extensive forests, fillers based on wood are manufactured in quantities large enough to permit considerable exports.

Bearing in mind the ready availability of wood, it is surprising that the cellulose plastics industries have not developed further; on the other hand, the extensive woodworking industries have called for a large domestic production of adhesives, urea, melamine, phenolic, epoxy, and thermoplastic types such as pva.

Products

Films, sheets, extrusions, pipes, tubes, coated fabrics and papers, dipped goods, flooring and tiles, rigid and elastic foams, reinforced plastics, moulded articles of many kinds, are all produced in Sweden.

Perhaps the most 'native' Swedish plastics product is the constructional element based on a sandwich structure, having a foam, or honeycomb, or impregnated paper inside. In boats, aeroplanes, and even guided missiles, it is giving the famous Swedish designers a new kind of material to work with whose properties they are but now beginning to understand.

The Federation introduced an informative labelling system in 1956 which is now used by most of its members. In 1960, a kind of ethical code was established and accepted by its members.

Exhibitions and conferences are organized by the Federation which also sponsored work on standards until 1959 when the Swedish Standards Association formed a plastics department, still with the financial support of the Federation. This standards department actively participates in the international field, through ISO.

The Federation has five specialist sections: (1) compression and injection moulders, (2) acrylic sheets, (3) reinforced plastics, (4) packaging, and (5) plastics in building.

Swedish products have a world-wide reputation for good design and the plastics industry tries to maintain it by employing or consulting leading architects and form designers, and they also co-ordinate their designs so that the consumer can get harmonious replacements and additions. Their motto is not only 'Fitness for Purpose' but also 'Most Advanced Yet Acceptable'.

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MEN and MATTERS

A Review of People and Events

by Peter Richards

THE UK application for entry into the Common Market should be making many firms think of wider horizons for their products. Sales managers should be taking down their maps of England and replacing them with maps of Europe. But many companies, of course, have been preparing for this move for a long time. For a number of years Dunlop has been examining the possibilities for each of its Divisions; so has I.C.I. Recently the latter company established its European Council (formed in July 1960) as an operating board. This supervises all the company's interests in Western Europe, including both the EEC and EFTA.

In this 'new Europe' contest we are going to hear more and more of the phrase 'economic planning'. Monsanto Chemical Co.'s overseas division has made an appointment reflecting this: at the beginning of September Donald Hirsch will join the division as manager of economic planning for Europe.

Mr Hirsch has been in the field of international trade and overseas economic research since 1948. Recently he has been doing consulting work in New York City for the Economist Intelligence Unit.

Mould Cleaning on the Road

Demonstrate — and sell — is an old traveller's axiom. Goods ranging from brushes to tractors have been sold by it. Now Vacu-Blast Ltd., the manufacturers of shot-blasting equipment for mould cleaning, has given the axiom a novel twist. This firm has fitted out a Volkswagen with its equipment and is giving travelling demonstrations; apart from anything else, this is a good way of showing the mobility of the equipment.

The van is equipped with its own compressed air supply, the compressor being mounted over the engine from which it is driven by means of a nylon belt. The output of the compressor is 55cfm at 100psi which is adequate to operate the Vacu-Blast Midget, Minor and Dry Honer machines, all of which are carried in the van.

Touring demonstrations seem to be popular these days with mould cleaning machinery manufacturers. In October, Abrasive Developments Ltd. will be carrying out an ambitious Continental tour, demonstrating its latest Aqua process mould cleaning and polishing equipment. Details of this tour will be published in a future issue of *RPW*.

Hypalon Hump

The camel's hump is now being rivalled in the Sahara by the Hypalon Hump. This is a lightweight tank which can be filled or collapsed in a few minutes. It is solving water supply problems for companies operating in the Sahara desert.

The tank walls are made of a neoprene/nylon sandwich in five layers with a coating of aluminium pigmented hypalon synthetic rubber paint sprayed on the surface. This prevents the accumulation of static electricity and guards against heat penetration, so that the water inside remains fresh and cold.

The walls are about two millimetres thick and consist of three layers of neoprene bonded alternately on to two layers of nylon. This combination is said to give the fabric exceptional toughness and resistance to ageing.

Although they are mainly used for water, they can also carry petrol, fuel oils and various chemical liquids.

New Firestone Director

A. W. Edlin, ACIS, has been appointed to the board of directors of Firestone Tyre and Rubber Co. Ltd., Brentford. Mr Edlin, who has held the position of company secretary since 1930, joined Firestone in 1920 in the accounting division in the company's head offices, which were then in Tottenham Court Road, London. After spending three years in the Firestone offices in Akron, Ohio, he returned to England and was appointed chief accountant in 1928.

Court of Assistants

Another famous business name in plastics has been elected into the Court of Assistants of the Worshipful Company of Horners: H. V. Potter.

Mr Potter, former chairman and managing director of Bakelite Ltd., relinquished his executive duties in 1955 and retired as chairman in 1959. He still continues as a director of Bakelite Ltd. and, as his many friends know, takes an active interest in the plastics industry.

Rubber Caps to Music

Silence is becoming one of the most costly commodities. On top of

This new form of travelling salesman carries out demonstrations of shot-blasting equipment. The Volkswagen's engine not only carries the equipment, but drives it (*see: 'Mould Cleaning on the Road'*)

disorganized noise we are now subjected to organized noise — subdued background music piped into restaurants, railway stations, supermarkets — and, of course, factories.

You either like it or you hate it. I hate it.

The latest example I've come across is in the factory of one of the most famous names in the rubber bathing caps field — W. W. Haffenden, of Sandwich, Kent. Four hundred and fifty girls are now producing the caps, hot-water bottles and other goods to the 'subdued accompaniment of pleasant background music'.

As I say, I prefer my music as music, to be listened to and not taken as a background drug. But then, I don't have to work long shifts on a production line.

Visiting . . .

T. H. Roberts, joint managing director of Durie and Miller Ltd., producers of Duralay foam rubber underlay, is now on a business tour of USA and Canada.

His itinerary includes Montreal, Toronto and New York, and he is visiting Durie and Miller (Canada) Ltd. and Durie and Miller Inc.

New Press Officer for BRP

Peter Smedley has been appointed press officer of British Resin Products Ltd. for Rockite moulding materials and Cellobond and Epok resins. Mr Smedley was formerly in the press and broadcasting branch of the Ministry of Agriculture, Fisheries and Food.

John Murphy continues as press officer for Styron polystyrene materials, and will also handle publicity for Rigidex high density polythene.

Appointments in Brief

D. F. Campbell, chairman of Davy-Ashmore Ltd. is to retire from the board in September. M. A. Fiennes will succeed him.

Jocelyn O. Hambro has relinquished his appointment as director of the Rubber Plantations Investment Trust Ltd. This is due to increased pressure of duties at Hambros Bank.

* * *

R. F. Hockin has resigned from the board of Burtonwood Engineering Co. Ltd.

* * *

C. Ashton, at present sales manager, has been appointed a director of John Bright and Brothers Ltd.

Polly Ester is on 'holiday

THE LEGAL ANGLE

An Abominable Nuisance?

By a Barrister

'Du Pont's decision to build a toluene di-isocyanate plant at Maydown, Northern Ireland, means that it will be the second UK manufacturer of this raw material for polyurethane foam'. — RPW, July 15 1961.

A new plant — which means new employment for local residents, new prosperity for the town. In this case an extensive industrial site is being developed where there is plenty of room.

But suppose that a new industry is to be planted, as so many are, within earshot of private homes? In that case, it will mean disturbance, noise — and, possibly, expense — to local residents, who will not be pleased at all. So the question may arise as to what, if anything, they can do about it.

Put it another way. At what stage will the law step in and prevent you from impinging on the lives of others, while you are moulding a living for yourself?

The general rule is that you must use your own land in such a way as not to interfere with your neighbour's enjoyment of his land. If you do so interfere, you may be guilty of a 'nuisance'.

Nuisance has been defined as 'unlawful interference with a person's use or enjoyment of land, or of some right over, or in connection with it'. It may take many forms. There is noise from machinery . . . smoke from burning waste products . . . foul smells from industrial processes . . . pollution of water . . . and so on.

This does not mean, of course, that every noise, smell, smoke or such like unpleasant emanation from your premises makes you liable to a nuisance action. The interference must be 'unlawful' — and that means, in effect, 'unreasonable'.

'Who decides what is reasonable?' you ask.

The test is 'the ordinary usages of mankind living in society, or more correctly, in a particular society'.

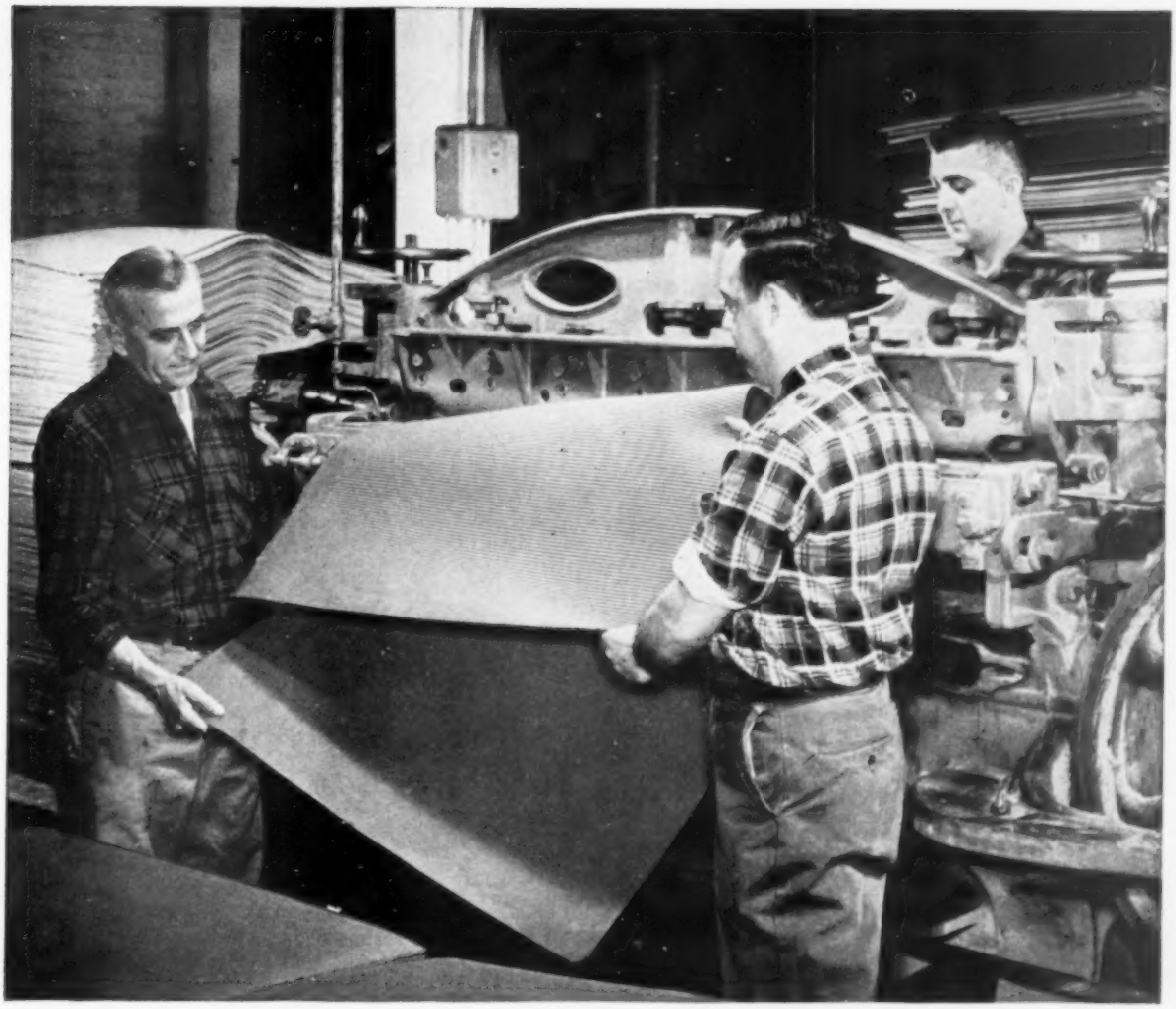
Another authority puts it like this: 'The homely phrases, "give and take", "live and let live" are appropriate tests. A balance has to be maintained between the right of the occupier to do what he likes with his own, and the right of his neighbour not to be interfered with'.

'So if you are unfortunate enough to set up your factory next door to a nightworker's home, you are in trouble?'

No. There must be 'a material interference with the physical comfort of human existence reckoned not merely according to elegant or dainty modes or habits of living, but according to plain and sober and simple notions among the English people'. And the test, as so often, is 'the ordinary man' — who sleeps at night, is reasonably healthy and can put up with a reasonable amount of interference through neighbourly noises and the like.

Finally, the likelihood of Du Pont — or anyone else — being plagued with nuisance actions, depends to a large extent on the locality where the factory is placed. What might be a nuisance in Mayfair will not be in Maydown. Residents in high-class residential districts may expect a good deal more peace than those with homes on industrial estates.

To sum up, then — reason must triumph once again. If, in all the circumstances, the new plant causes no unreasonable interference with people's lives, all will be well, but if not — there may be trouble.



Photograph taken with the co-operation of Kleistone Rubber Co., Warren, Rhode Island, U.S.A.

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Latex Foam Conveyor System

VITAFOAM COMPLETES HALF OF £470,000 ARMY CONTRACT

VITAFOAM Ltd. has completed half of the £470,000 Army contract placed last January for 67,000 mattresses. The company has now released details of how it dealt with this exceptionally large mattress order — believed to be the largest single order ever placed for latex foam mattresses.

The contract stipulated that delivery of the 67,000 mattresses was to begin within three weeks at the rate of 2,000 mattresses a week, which meant immediately stepping up production by this number. An additional problem was the size, 2ft. 6in. wide — not one normally in much demand. Moreover, mattresses were to be delivered not to a central depot but to Army stores throughout the UK and Europe.

Looking Ahead

For an order of this kind to be accomplished without disruption of normal deliveries 'the first essential is a flexible production system', said Frederick Whitehead, joint managing director of Vitafoam Ltd. 'In other words be prepared for success — think of next year's business'.

Vitafoam stated that to ensure a flexibility which could not only cope with extra large orders but would also give improved service to existing customers, some two years ago it scrapped £50,000 worth of still useful machinery to install a conveyor system of its own making.

This is said to be the only one of its kind and without it 'next year's business' — including the Army contract — could never have been tackled.

On this conveyor the metal moulds in which the mattresses or cushions are formed move without a break, first past the fillers who fill them with foamed latex, then through ovens where the latex is cured or vulcanized, to operatives who strip out the finished mouldings and clean the metal moulds, and finally back to the filling station.

An overhead gantry system allows moulds no longer required to be lifted out of the system and new ones to be linked in without halting production.

In the case of the Army contract, for example, it was only necessary to see that sufficient moulds of the size required were linked to the system and to switch from two to three-shift working — the system can operate if necessary without ceasing — to ensure the necessary quantities.

In practice, the system proved capable of handling a contract three times the size of the Army order without interrupting the flow of goods into the retail shops and to the upholstery industry. The numbers of mattresses despatched weekly could easily have been increased if necessary to meet new delivery requirements.

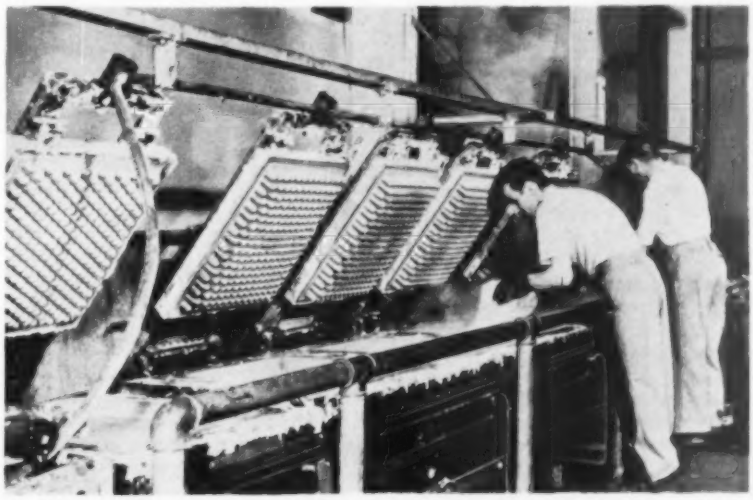
Mr Whitehead considered that a foolproof system of internal communication — not only physical communication but the two-way flow of vital information and liaison between various departments — was an essential, since a bottleneck in one section might cancel out the advantages of a flexible system.

In this particular instance speedy communication with the cover-making department made sure that extra seamstresses were available the moment the first batch of mattresses left the conveyor.

The physical flow of goods was ensured by a second conveyor line passing mattresses from the mould-strippers, by way of inspection department, to the cover-makers.

For delivery purposes a system of door-to-door delivery by British Railways container was worked out.

The contract will be completed by the first week in October.



Moulds in which mattresses or latex foam cushions are moulded are opened and closed automatically by a simple but ingenious device incorporated in the conveyor system. Lids of the moulds are opened when rollers fitted to the handles run up an inclined bar (extreme left), are held open as the handle is supported by the straight bar and are closed by running down a second incline

Undercarriage in GRP

A glass-reinforced plastics aeroplane undercarriage, claimed to be the first of its kind, has been produced in Sweden by AB Malmo Flygindustri, a unit of Trelleborg Rubber Co. Designed for use on an experimental light plane, the filament-wound part, using Owens-Corning Fiberglas glass roving, has successfully passed severe stress tests.

Less Vibration

These have shown that this undercarriage has better shock absorbing and damping properties than conventional undercarriages, and provides a smoother ride on the ground, minimizing vibration and wear and tear on instruments.

Design specifications for the new part have been incorporated in US Federal Aeronautics Administration civil air regulations.

Parts made with the material are light in weight, self-damping, have a relatively low modulus, and retain their strength characteristics at very low temperatures such as a plane would encounter in winter or at very high altitudes.

CORRESPONDENCE

Structure — and Carbon Black

Sir,

In the comments of July 22 1961 (Views and Reviews, by Charles Jennings) the use of the term 'Structure' to describe a fundamental property of carbon black was deplored. With your kind indulgence I will endeavour to defend this usage.

First, structure is not synonymous with aggregation as you suggest. Aggregation is the clustering of particles into a mass, held together by physical forces, and involving particles of varying degrees of anisotropy or shape factor. Normal dispersion methods will largely disaggregate these clusters and result in a more or less particulate dispersion, the degree of dispersion depending on a number of factors that need to be reviewed here.

On the other hand, structure refers to the anisotropy or shape factor of the particles within the aggregates or agglomerates. When the electron microscope first revealed the varying anisotropy or shape factor of carbon black particles, it was observed that this anisotropy had the appearance of a pendant or chain of particles fused together, and the term 'reticulate chain structure' was used to describe this shape habit. In time the term was abbreviated to 'structure'.

All carbon black particles during manufacture develop reticulate chain structure in varying degree. Furthermore, the fusion links or bonds joining the particles in these chains vary in their thickness and hence persistence. The thermal carbon blacks develop little reticulate chain structure and any fusion bonds are usually weak and readily broken during milling. On the other hand, certain lampblacks and Shawinigan acetylene black, for example, develop extreme reticulate chain structure and the fusion bonds being quite strong are not readily broken during milling. Hence, at the same particle diameter the thermal blacks will give a much lower oil absorption than either the lampblacks or Shawinigan black. To date, oil absorption has provided the simplest and most reliable measure of the carbon black structure that persists during the mixing of rubber compounds.

Other things being equal, the level of carbon black structure persisting in a rubber compound will determine to a large extent the level of modulus and hardness in a tread stock. When it was first decided to explore the possible benefits of a lower modulus and hardness SBR tread stock, without any significant sacrifice in wear, through the use of lower structure reinforcing carbon blacks, there were no such carbons available. It was this need that led to the development of the lower structure carbons such as the Neotex carbons.

It was demonstrated that this softer SBR or OEP tread resulted in the improvement of ride and related properties, in the direction previously shown for butyl tyres, but with no significant sacrifice in wear resistance. Later it was found that these OEP-Neotex tyres gave improved traction on snow and ice, an improvement much more pronounced than shown on pavement. This effect is associated with tread softness and not hysteresis. Since the polymer itself is a contributing factor in such performance properties as traction, any comparison of carbon black effects should be made in the same polymer.

I trust that you will find this somewhat lengthy epistle of some small use in clarifying any obscure or debatable points found in our paper.

Sincerely yours,

C. W. SWEITZER,
Director of Research.

Columbian Carbon Co.,
Research Laboratories,
Princetown, N.J., USA.

C. B. Copeman

Appreciations of C. B. Copeman, former chairman of Maclaren and Sons Ltd. for ten years, who died recently, appeared in the last two issues. Robin MacLellan, director of George MacLellan and Co. Ltd., of Glasgow, writes:

I remember Bert Copeman for the warmth of his friendship, the practical nature of his kindness and his spirit of adventure.

He came rarely to Glasgow, and then only for a short time. Yet one could so easily take up where one had left off; and there was always a feeling of sympathetic interest and never one of condescension towards a younger and less experienced man.

A quietening hobby? 'Learn petit-point (or was it gross-point?), my friend'. (I never did. . . .) A sore back? 'Deep heat therapy is what you need'. (And it was, too. Cured in a day!) Want to sell more abroad? 'Then fly to Australia via San Francisco and Canton Island and Figi. You'll never forget it'. (I went — he was right as usual.)

Only occasionally is one privileged to look back and say 'That man was an influence for good in my life'. Of such stuff was my friend Bert Copeman made.

Midland's Midland Move

Midland Silicones Ltd. has moved its Birmingham sales office to Lichfield House, Smallbrook, Ringway, Birmingham 5.

BLOW MOULDING

Continued from page 246

materials are concerned by the availability of three types of screws.

The screw actually enters the extrusion head which avoids 'dead' spots so common in older extruders, particularly those without flighted tips. The head itself has a special clamping device which provides a quick and safe locking of the head to the extruder.

Two-Colour Mouldings

An interesting feature of the Kautex machines is that they can be converted to produce objects in two colours. This is accomplished by the use of twin extruders, the Z40 for the V8 and V18 machines, and the Z60 for the H110 and H260 machines.

Both of these extruders are fitted with special slot extrusion heads which produce sheets of different colour and different material if required. These are extruded downwards, clamped together and blown in the usual way. The method is particularly suitable for the production of flat articles.

All of the Kautex machines can be fitted with single, double or treble extruder heads to produce one, two or three parisons, thus increasing output from the same machine. The length of all operational strokes can be varied so that they are short for small objects and long for large ones which reduces idle time to a minimum.

Machine Tool Exhibition

The Seventh European Machine Tool Exhibition will be held in Brussels from September 3-12 1961. Several of the principals of the Elgar Machine Tool Co. Ltd., distributors of Flesch injection moulding machines and Illig vacuum forming machines, will be exhibiting. But generally it seems very little equipment of direct interest to the plastics industry will be on show, and the exhibition is mainly confined to milling, turning, drilling, copying, sawing and grinding machines.

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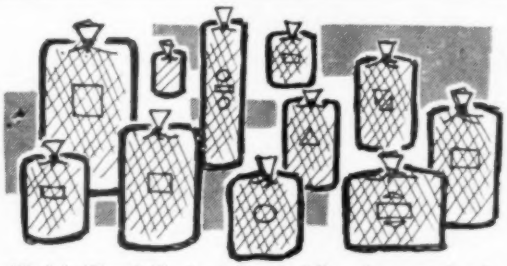
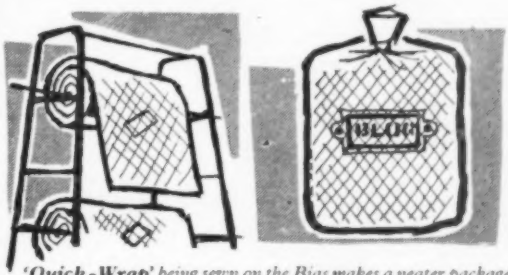
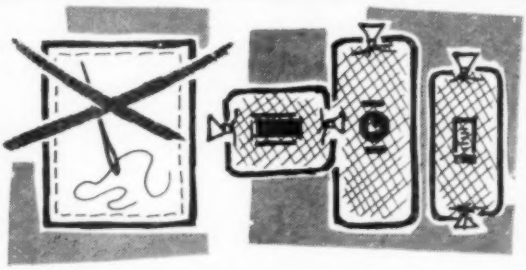


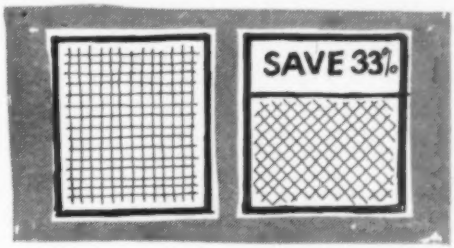
'Quick-Wrap' Hessian tubing is delivered to you already sewn into tubes of over 11 different diameters and in lengths of approximately 160 yards.



'Quick-Wrap' being sewn on the Bias makes a neater package because it moulds itself to your products.



'Quick-Wrap' means you can wrap 3 to 5 parcels of goods in the time it takes to hand-sew one.



'Quick-Wrap' means less wastage, you use about 33⅓ less Hessian and the tubes can be used time and time again.

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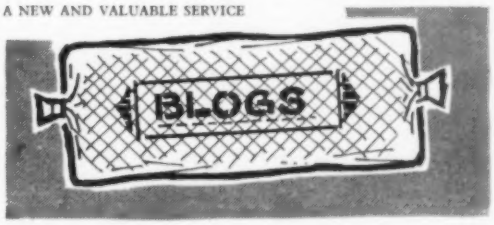

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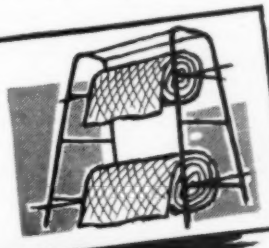

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Plantation Newsletter

STRATEGIC PLACING OF RRI OFFICERS?

by our Malayan Correspondent

FROM KUALA LUMPUR

THE possibility of Rubber Research Institute officers being stationed at a few strategic rubber growing areas in Malaya is now being studied by the headquarters here. This is part of the scheme by the IRI to expand its Estates Advisory Service into a regional advisory cum husbandry research service.

If the plan materializes, RRI officers will be capable, not only of doing advisory work, but of carrying out field experiments on estates to solve local husbandry problems, and also of assisting specialist research officers in the routine supervision of their experiments on estates.

Another idea is to hold annually a small and informal meeting with people in the industry who are actively interested in, or participating in, research with the object of discussing the work done by the Institute in the previous year and, as far as they might care to do so, the work done by commercial research units.

The director of the RRI, Dr C. C. Webster, has made it clear that the outstanding factor affecting the industry today is that it is entering a new phase of competition with synthetic rubber.

Until recently none of the synthetic available approached the position of duplicating all the technical properties of natural rubber, he said. Consequently there had been some uses for which synthetic was technically superior, some where natural was superior, and some where the two were, in some degree, technically competitive.

'Now, with the recent production of the new stereo-regular synthetics which more nearly approach a full duplication of the properties of natural rubber, it seems that there must be far more uses for which natural and synthetic will be technically competitive', he added.

Lowering the Cost

The present position would therefore seem to emphasize very strongly the ever-present need for research to aim at lowering the cost of production of natural. In the past few years, the RRI has done much good work in this field and it has made major contributions in the introduction of yield stimulation and in the introduction of the double-cut system. But there are still a number of seemingly simple questions to which answers are still needed, in all of which economic considerations are of the first importance.

For instance: what is the optimum size and/or age at which trees should be opened for tapping? What is the optimum stage at which to introduce the use of yield stimulants? What is the optimum stage at which to introduce the double-cut system? Would it pay off, in terms of increased girthing, sustained yields and yields per tapper, to adopt for certain clones in the early years a periodic tapping system of reduced intensity, possibly counteracting a temporary reduction in yields by the use of yield stimulants?

The answers to these questions and others are being energetically sought by officers of the RRI.

Meanwhile, it has been announced that an organization and methods expert is to be called to help reorganize the RRI as part of the rubber industry's plan to produce more and better rubber at lower cost.

The Controller of Rubber Research, Sir Geoffrey Clay, who is also chairman of the Malayan Rubber Fund Board which finances the RRI, has said that the present board will be replaced by a management committee.

This committee will be an executive body concerned with the day-to-day business and administration of the RRI. Sir Geoffrey said: 'The present board of the RRI is employing an organization and methods expert to make a survey of the administration of the RRI and its experiment station at Sungei Buloh'.

Until his report has been received and studied, it is not possible to define exactly the future set-up in RRI headquarters. However, it is important that there should be proper co-ordination between the institute and the rubber industry.

Tapping in Scotland

A tapper's latex-collecting cup, rubber seeds and some scrap rubber are to be sent from Malaya's Ministry of Education to a 13-year-old Scottish schoolboy now learning about the Malayan rubber industry.

The boy is Duncan McAra, of Edinburgh, who has written to the Public Relations Officer of the Ministry asking for a latex collecting cup. In exchange he sent a wall map of Scotland, which now hangs in one of the offices of the Ministry.

The Public Relations Officer, Inche Abdul Majid bin Othman, said he was delighted that this boy was taking more than an academic interest in the rubber industry and not only would he get him a latex collecting cup, but also some rubber seeds and some scrap rubber.

'I hope they will lend a more practical note to his study of our industry', he added.

Rubber Statistics

WEST GERMANY — UNITED STATES

WEST Germany's rubber tyre production in May was higher than in April but it still did not reach the monthly average of last year, according to the Federal Bureau of Statistics in Frankfurt. It totalled 19,138 tons (provisional) compared with 18,715 tons (revised) in April and with 20,085 tons in May of last year, when the monthly average was 19,360 tons.

Production in the first five months of this year, however, showed the increase in production in both the motor car and the rubber tyre industries, for it amounted to 97,163 tons (provisional) compared with 95,686 tons produced in the first five months of last year.

In the individual sections of the West German rubber tyre industry production was (in 1,000 units, May figures provisional):

	May	April	Jan./May, 1961	Jan./May, 1960
Bicycle tyres	918	972 (rev.)	5,188	5,933
Motor cycle tyres	66	67	360	412
Car tyres	1,100	1,068	5,507	5,502
Lorry tyres	149	142	755	788

Output of other hard and soft rubber goods during May totalled 22,562 tons (provisional) against 22,576 tons (revised) in April and 24,804 tons in May of last year. In the first five months of this year it amounted to 119,386 tons (provisional) against 118,959 tons in the corresponding period of last year.

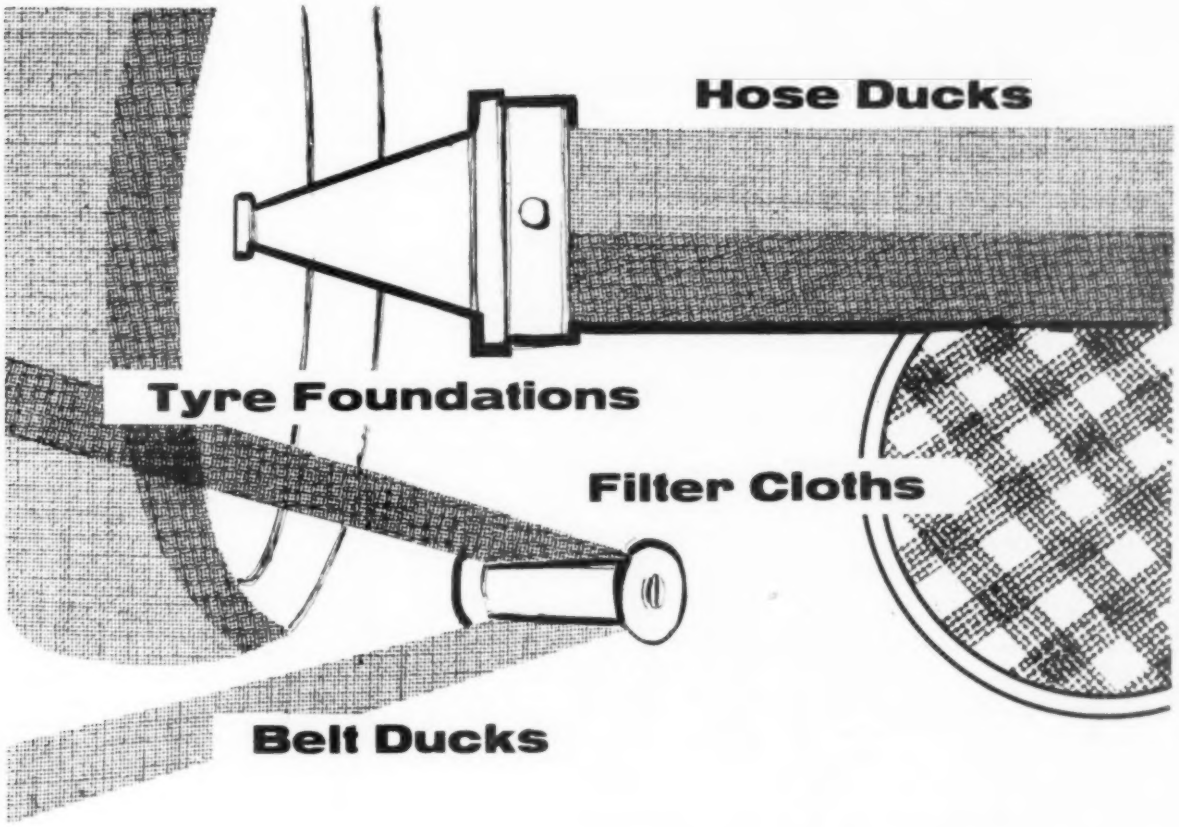
Imports of natural rubber and rubber sole crepe during April totalled 11,109 tons (provisional), including 6,572 tons from Malaya, 1,141 tons from Thailand and 1,017 tons from South Vietnam.

Imports of synthetic rubber during April totalled 3,793 tons (provisional), including 2,092 tons from the USA, 750 tons from Canada and 359 tons from the Netherlands.

United States

The United States Rubber Manufacturers' Association reports that the total consumption of new rubber in June amounted to 128,850 tons against 125,848 tons in May. Consumption in June comprised 35,650 tons of natural rubber and 93,200 tons of synthetic (including 76,365 tons of SBR). May consumption comprised 35,284 tons of natural and 90,564 tons of synthetic (including 74,188 tons of SBR).

Total synthetic rubber production in June was 102,232 tons against 109,502 tons in May, while production of SBR was 85,010 tons compared with 89,662. Total synthetic rubber exports in June were 23,785 tons against 22,830 tons in May.



Tyre Foundations **Tarpaulin Canvas & Sail Cloths** **Liner & Wrapper Cloths** **Filter Cloths** **Transmission & Conveyor Belting Ducks** **Hose Fabrics** **Boot & Shoe Materials** **Protective Clothing** **Fabrics for Rubberising Plasticising and Laminating Purposes** **Printers' Blanket Wigans**

Hay & Robertson

Whatever your fabric requirements or problems consult Hay & Robertson at

St. Margaret's Works, Dunfermline
Telephone: Dunfermline 1
Telegrams: 'HAY' Dunfermline
London Office: 74 Cheapside, E.C.2. Tel: CITY 5901

Rubber Markets

LONDON

Terminal market business was centred mainly on the more distant positions on August 9, but the turnover was small. Holidays at the factories further restricted offtake of physical rubber. Despite the general slowness of demand, prices were well maintained at a slight advance over recent levels, and sellers were disinclined to offer extensively.

Latest prices are as follows:

No. 1 RSS Spot: 24⅝d.-24⅞d.

Settlement House:

September 24¾d.-24⅞d.
October 24⅞d.-25d.
November 25⅛d.-25¼d.
October/December 25⅛d.-25¼d.
January/March 25¼d.-25⅜d.
April/June 25⅜d.-25½d.
July/September 25⅜d.-25½d.

No. 1 RSS cif basis ports:

August 24½d.-24¾d.
September 24⅝d.-24⅞d.
October 24¾d.-25d.

Godown:

August 82¾ Straits cents.

Latex

Centrifuged 60% latex per gallon in drums, seller, September, October, 14s. 5d., cif European ports. Spot, seller 14s. 10d. Bulk, seller d.w. 14s. 2d. Normal, seller, September, October, 11s. 4d.

NEW YORK

The New York rubber market ruled as under on August 7:

Dealers' Prices

	US cents per lb., ex-dock	
	Aug. 7	Previous
No. 1 RSS, Aug.	29½b–29⅝a	29⅝b–29¾a
Sept.	29½b–29⅝a	29½b–29⅝a
No. 2 RSS, Aug.	29⅜b–29¾a	29½b–29⅝a
Sept.	29⅜b–29¾a	29½b–29⅝a
No. 3 RSS, Aug.	29½b-29⅝a	29½b–29⅝a
Sept.	29½b–29⅝a	29b –29⅛a
No. 1 RSS, Spot	29⅞n	29⅞n
No. 3 amber blanket crepe, August ..	25¾n	25¾n

Futures—Rex Contract

	Aug. 7	Prev. Close
Sept. ..	29.60t	29.40b–29.80a
Nov. ..	29.50b–29.65a	29.25b–29.55a
Jan. ..	29.45b–29.50a	29.15b–29.40a
March ..	29.45t	29.05b–29.30a
May ..	29.30b–29.45a	29.00b–29.30a
July ..	29.30b–29.45a	29.00b–29.30a
Sept. ..	29.30b–29.45a	29.00b–29.30a

Sales: Three. Tendency: Very steady.

Rubber futures were steadier on August 7 on covering in modest dealings. In the closing stage, futures were very steady. Moderate inquiry was noted in physical rubber, but only light sales were reported. The market was steadier in late trading.

SINGAPORE

Post-holiday conditions prevailed throughout the morning of August 8. There was fair interest for lower sheets but sellers remained reserved and business was restricted. In the afternoon, the market ruled quiet but steady. Prices were held on interest in lower sheets and the higher off grades. After hours the market was quiet.

	Malayan cents per lb., fob Malayan ports to open ports	
	Aug. 8	Prev. Close
No. 1 RSS, Aug. ..	83½–84	83½–83¾
Sept. ..	84⅛–85½	84⅛–84½
No. 2 RSS, Aug. ..	83½–84	83⅜–83¾
No. 3 RSS, Aug. ..	83½–83⅝	83 –83½
No. 4 RSS, Aug. ..	81½–82½	80½–81½
No. 5 RSS, Aug. ..	72½–73½	72 –73
No. 1 RSS, Spot ..	83½–84	83¼–83½
No. 3 blanket thick remilled crepe, Aug.	72 –73	71½–72½
No. 1 fine pale crepe, Aug.	93 –94	92 –93
2X thin brown crepe, Aug.	69½–71	68¾–69¾

Tendency: Quiet.

The Industries Syndicate quote latex, native produce, 60% centifrugal, packed in rectangular drums, fob, at 163.80d. per gallon.

AMSTERDAM

The Amsterdam rubber market ruled as under on August 7:

	Guilders per kilo	
No. 1 RMA	Aug. 7	Previous
August	2.29	2.29
September ..	2.29	2.29
July/September ..	2.29	2.29
October	2.29	2.29
November ..	2.29	2.29
December	2.29	2.29

Sales: Nil. Tendency: Quiet.

DJAKARTA

	Rupiahs per kilo	
	Aug. 7	Previous
Spot No. 1 Priok ..	33.50b	33.50b
Spot No. 2 Priok ..	32.50b	32.50b
Spot No. 3 Priok ..	31.50b	31.50b
No. 1 fine pale crepe, spot	31.25b	31.25b

Tendency: Quiet.

CEYLON

The price of No. 1 RSS at Colombo on August 7 was 100½ (100½) Ceylon cents per lb.

BANGKOK

The price of No. 1 RSS at Bangkok on August 7 was 27.00 (27.00) US cents per lb.

All-PTFE Pump

ASSOCIATED Electrical Industries Ltd. has produced a pump whose working parts are composed entirely of ptfe, and a coupler for ptfe tubing. The pump is a diaphragm type and is self-priming.

The vacuum-formed diaphragm, and all the other ptfe parts in contact with the liquid being pumped, are housed in a cast aluminium body which is bolted directly to a capacitor-run AC geared motor. The motor gearbox provides a 7:1 step-down to give a diaphragm reciprocation speed of 200 cycles/min. The life of the diaphragm is said to be more than 1,000 hours.

The new ptfe coupler is a spring-loaded telescopic unit which expands to grip the tubing inserted at each of its ends.

Pump delivery at a 1ft. head is 2 litres/min., and at the maximum working head of 15ft. is 1.25 litres/min. Power consumption is 50 watts.

It enables ptfe tubing to be joined so that only ptfe is exposed to fluids travelling in the tubes. The coupler, when used with tubing whose ends have been 'belled', is said to cause no restriction whatsoever in the flow system; it is capable of withstanding pressures up to 50psi.

Food Protection

The latest issue of 'Bakelite Plastics in Packaging' describes the use of Vinylite lacquers for the protection of food, and reports on the success of products marketed in blow-moulded, polythene squeeze packs.

Injection - moulded furniture legs made by Plastic Engineers Ltd., of Pontypridd, using Monsanto Chemicals Ltd.'s Lustrex T3 polystyrene

Industry INTELLIGENCE

Technical Data

Resin Impregnated Fabric

Leicester, Lovell and Co. Ltd., North Baddesley, Southampton, are the manufacturers of Resnit, which is a knitted cotton fibre impregnated with phenolic resin.

This is supplied in the form of dry semi-rigid sheets up to 48in. wide. It is intended to be used in conjunction with heated press tools similar in construction to those used in sheet metal presswork and is capable of being formed into very complex shapes.

Technical bulletin No. 479a, recently issued by Leicester Lovell, together with a general folder, gives details of the properties and processing of Resnit.

Advantages claimed for Resnit mouldings include fire resistance (will not support combustion), acid, fuel oil and lubricant resistance, dimensional accuracy, light weight and stability at temperatures up to 120°C.

Polysar Latex 723

Polysar Latex 723 has been developed to replace natural latex completely in the manufacture of foam rubber, and to give a finished product claimed to have the highest load-carrying characteristics of any latex currently available.

These improvements have been achieved by an extension of the freeze agglomeration technique used for the production of high solids latices.

Compounding and processing instructions and properties of vulcanizates prepared from Latex 723 are given in Polysar Technical Report No. 11: 2A, available in this country from Polymer (UK) Ltd., Walbrook House, Walbrook, London, E.C.4.

Foamback Adhesive

The recent development of fabric/foam laminates has created a demand for adhesive systems that give strong laminates having a supple handle and good resistance to washing and dry-cleaning.

Technical Information Sheet Urethane PC/U.28, issued by the Polymer and Chemical Service Department, Dyestuffs Division, Imperial Chemical Industries Ltd., describes such an adhesive system. The adhesive is a polyurethane based on Daltoflex 25 and Suprasec G which, when applied by the transfer spreading system, also described in the leaflet, may be applied to knitted fabrics, which are difficult to laminate by conventional techniques.

Information is given in the leaflet on the material used, the preparation of solutions, the application of the adhesives to the fabric and the properties of cured foam/fabric laminates. Also included are notes on the applications of foam-backs and other applications of the transfer spreading technique.

Pevikon Pvc

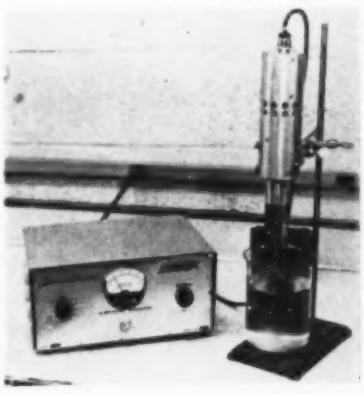
Pevikon pvc polymers and copolymers are produced by Stockholms Superfosfat Fabriks AB, whose agents in the UK are Guest Industrials Ltd., Raw Materials Division, 81 Gracechurch Street, London, E.C.3.

A new pamphlet on these materials has recently been produced, and is available from the address given above. Details are given in this pamphlet on the ten grades of Pevikon available, their main uses and special features. Also included is some information on the theoretical relationship between Flikeutscher 'K' valve, and relative viscosity at different solution concentrations. This indicates that the differences in K value when measured by different methods is caused by the nature of the solvent rather than the differences in concentration and the temperature.

Machines, Materials and Equipment

Ultrasonic Emulsifier

A new, compact, 75-watt ultrasonic emulsifier has been introduced by Branson Instruments Inc., 40 Brown House Road, Stamford, Conn., called the S-75 Sonifier. Advantages claimed for the instrument include: rapid emulsifying and dispersing, even in



otherwise 'impossible' cases; reduction in the amounts of emulsifier needed for a particular application; and extremely minute particle size resulting from the ultrasonic treatment.

Materials as diverse as blood serum and printing ink or paint dispersions are quickly prepared with the Sonifier. The instrument is a laboratory tool for a number of fields, including medicine as well as pharmaceutical, chemical, food processing, plastics, rubber, cosmetics, printing ink, paint and varnish production.

A metallic cone, fastened to the transducer, couples the ultrasonic energy to a removable tool bit, available in a variety of sizes and materials for different applications. The cone acts as a mechanical transformer to increase vibration amplitudes at the tip, and thus provides greater energy intensities. Efficient emulsification or dispersion is easily obtained by selecting one of eight possible power levels, and immersing the tool bit in the liquid for a short time.

Publications

Thinners on Tap

Designed especially for paint users is a new publication 'With Thinners on Tap', recently issued by British Resin Products Ltd. It gives performance data on water thinnable primer and gloss paints formulated on the new Epok water soluble resins.

Primers are claimed to possess excellent corrosion resistance; gloss coats to have outstanding resistance to marring, and very good gloss and flow. The adhesion and flexibility of both types of resin-based paint is another noteworthy feature.

Of particular value to paint users will be the list of manufacturers of water thinnable paints, enclosed in the leaflet, copies of which are available from British Resin Products Ltd., Devonshire House, Piccadilly, London, W.1.

Silicones for Space

A booklet has recently been published by General Electric, Waterford, New York, on silicones for the space age. This describes many of the applications in American rockets and space projects which have made use of silicones and gives other uses where the properties of silicones make them ideal materials.

'Over 200 silicone products are available to industry', claims GE, 'ranging from volatile liquids to stable solids. Making up this wide product range are three main groups — elastomers, resins and fluids. Within each group are many products, each possessing a unique combination of properties designed for numerous space age applications ranging from high temperature sealants and lubricants, to protective coatings and electrical and electronic insulation'.

Properties referred to in the booklet include high temperature resistance, low temperature flexibility, good electrical properties, resistance to ageing and weathering, water repellancy and radiation resistance.

Material Prices

Prices of materials appear regularly in RUBBER AND PLASTICS WEEKLY each month. It will be appreciated if suppliers will give notification of any price changes and additions to or deletions from their range. Comments on the present materials and classifications are invited in order that the list may be made of maximum service to our readers.

Unless otherwise stated prices are per lb. In most cases prices vary according to quantity. pc—per cwt pg—per gallon pt—per ton ag—according to grade xs—ex-store xw—ex-wharf dp—duty paid sp—special prices for contracts del—delivered cp—carriage paid

Accelerators

Alpha 5s. 8d.—6s. 4d.
Ancap cp 2s. 10d.—3s. 8d.
Ancap Zinc Salt cp 3s. 2d.—4s. 2d.
Ancatax cp 3s. 9d.—4s. 6d.
Ancazate BU cp 6s. 3d.—6s. 9d.
Ancazate ET cp 5s.—6s. 4d.
Ancazate ME cp 6s. 2d.—7s.
Ancazate Q cp 6s. 1d.—6s. 4d.
Ancazate XX cp 5s. 1d.—5s. 9d.
Ancazide ET cp 5s. 9d.—6s. 6d.
Ancazide IS cp 7s. 6d.—8s. 6d.
Ancazide ME cp 4s. 6d.—5s.
Cu.D.D. 9s. 3d.—10s.
D.Bu.D. 10s. 6s.—11s. 3d.
D.D.D. 12s. 2d.—13s. 3d.
D.P.G. cp 3s. 5d.—4s. 2d.
D.O.T.G. cp 4s. 5½d.—4s. 9d.
Dibenzo GMF 27s.—28s. 6d.
Furbac cp 5s.—5s. 9d.
Gamma 10s. 6d.—11s. 3d.
GMF 27s.—28s. 6d.
L.M.D. 9s. 3d.—10s.
M.Z.I. 3s. 6d.—4s. 2d.
N.Bu.D. 10s. 6d.—11s. 3d.
Ni.P.D. 12s. 2d.—13s. 3d.
P.P.D. 12s. 2d.—13s. 3d.
P.T.D. 12s. 2d.—13s. 3d.
Robac 22 10s.—11s. 3d.
Robac 44 9s. 1d.—9s. 10d.
S.P.D. 9s. 3d.—10s.
Suparac M 9s. 7d.
T.B.U.T. 15s.—16s.
T.E.T. 6s. 6d.—7s. 4d.
Thiuram P.25 15s.—16s.
T.M.S. 7s. 8d.—8s. 6d.
T.M.T. 5s. 4d.—6s. 3d.
Vulcacit CZ deldp 7s. 1d.
Vulcacit F deldp 4s. 8½d.
Vulcacit NP deldp 11s. 2d.
Vulcacit P Extra N deldp 8s. 1d.
Z.B.E.D. 15s.—16s.
Z.Bu.D. 6s. 3d.—7s. 3d.
Z.D.C. 5s. 1d.—5s. 7d.
Z.L. 9s. 3d.—10s.
Z.P.D. 9s. 3d.—10s.

Antioxidants and Antiozonants

Agerite AK cp 3s. 6½d.—4s. 5½d.
Agerite HPX cp 4s. 5d.—4s. 10d.
Agerite Powder cp 3s. 7d.—4s.
Agerite White cp 8s. 10d.—9s. 7d.
Antioxidant 2246 cp 11s. 8d.—12s. 4d.
Antioxidant 425 cp 18s. 6d.—19s. 3d.
Antioxidant SP cp 3s. 8d.—6s.
BLE-25 3s. 7d.—4s. 5d.
BXA 3s. 6½d.—4s. 5½d.
Naugawhite 4s. 9d.—5s. 6d.
Octamine 3s. 9d.—4s. 6d.
Polygard 3s. 7½d.—4s. 5d.
UOP 88 xs 9s. 3d.
UOP 288 xs 9s. 3d.
Wing-Stay S 3s. 8d.—4s.
Wing-Stay T 4s. 10d.—5s. 6d.
Wing-Stay 100 10s. 6d.—11s. 6d.

Compounding Ingredients

Barytes ptag £10—£40
Calcium Silicate del 9d.—10½d.
Calcene ptxw £52—£69 10s.
Calcined Clay (Burgess) ptxs £37—£53
Carbonate, Light Mg. ptsp £97
Carbonate, Actidated Ca. pt £28—£30
Carbon Blacks:
Conductex SCF 1s. 2½d.
Continental AMPC ag 11½d.—1s. 4½d.
Continex FEF ag 9½d.—10½d.
Continex HAF ag 10½d.—11d.
Continex HMF ag 9½d.—9½d.
Continex ISAF ag 1s. 0½d.—1s. 0½d.
Continex SRF, SRF-NS ag 8½d.—9d.
Dixie 45 GPF xs 6½d.—7½d.
Dixie 60 HAF xs 7½d.—8½d.
Dixie 70 ISAF xs 9½d.—10½d.
Dixiedensed HM MPC xs 11½d.
Dixiedensed 77 EPC xs 11½d.
Furnex SRF 9d.
Kosmos 45 GPF 6½d.—7½d.
Kosmos 60 HAF 7½d.—8½d.
Kosmos 70 ISAF 9½d.—10½d.
Magecol 888 cp 7.60d.
Micronex MPC 11½d.
Micronex W6 EPC 11½d.
Philblack A. FEF 7d.—8d.
Philblack E. SAF 1s. 0½d.—1s. 1d.
Philblack G. GPF 6½d.—7½d.
Philblack I. ISAF 9½d.—10½d.
Philblack O HAF 7½d.—8½d.
Regal 300 7½d.—8d.
Regal 600 9½d.—10d.
Statex B. FF 10½d.
Statex R. HAF 11d.
Statex 93 HMF 9½d.
Sterling SO FEF 7d.—7½d.
Sterling V. GPF 6½d.—7d.
Ukarb 327 GPF xs 6½d.—7½d.
Ukarb 340 xs 7½d.—8½d.
Vulcan 6 ISAF 9½d.—10d.
Vulcan C CF 11d.—11½d.
Vulcan 3 HAF 7½d.—8d.
Vulcan XXX SCF 1s. 2½d.—1s. 2½d.
China Clay ptagxs £12—£68 10s.
Factice Dark cp 1s. 0½d.—1s. 10d.
Factice Whitbro cp 1s. 3½d.—2s. 2½d.
Factice White 1s. 5½d.—1s. 11d.
Kieselguhr Spanish White ptxs £37 12s. 6d.
Lithopone 30% ptxs £68 10s.
Manosil VN3 pt £109—£139
Manosil AS7 £84 10s.—£114 10s.
Micafine Powdered Mica ptxs £67 10s.
Ochre Yellow pcxs £1 19s.
Oxide Light Mg ptsp £245
Oxide Red pcxs £4 3s.
Oxide Titanium 98% pcxs £8 8s
Rutiox CR pcxs £9 3s
Rubber Gen. Gran. Mineral ptxs £35 5s.
Shellac Dewaxed xs 2s.—3s. 9d.
Shellac Orange xs 1s. 9d.—2s. 3d.
Silica Hydrated ptxs £113
Sulphur Manox Insoluble del 1s. 9d.
Sulphur Powdered ptdel £20 17s.
Sulphur Sublimed Flowers ptxs £52 10s.
Talc Norwegian ptxs £13 7s. 6d.
Talc Italian ptxs £30 2s. 6d.
Tufknit Durham CS 8½d.—10½d.
White Lead Dry ptdelsp £114 15s.
Whitetex 2 Clay ptxs £45 10s.
Whiting ptxs £5 9s. 6d.—£7 7s. 6d.
Zinc Oxide pcdel £6

Plasticizers and Softeners

Abalyn pc 220s.—271s.
Al Stearate ptxwdp £253 10s.
Bisoflex 102 pt £513—£568
Butyl Ricinoleate 2s. 6d.—2s. 6½d.
But. Ac Ricinoleate 3s. 0½d.—3s. 1½d.
Butyl Stearate pt £277—£282
Ca. Stearate ptcp £220
Diallyl Phthalate 3s. 11d.—4s. 11½d.
Dialkyl Phthalate pt £221—£222
Dibutyl Phthalate pt £203—£204
Dibutyl Sebacate 5s. 9½d.
DiOA pt £354—£357
DiOS sp 5s. 0½d.—5s. 2d.
DOA pt £414—£420
DOP pt £276—£277
DOS sp 5s. 7½d.—5s. 9d.
Disobutyl Phthalate pt £196—£197
Diisooctyl Phthalate pt £221—£222
Dinonyl Phthalate pt £211—£212
DNS sp 5s. 2½d.—5s. 4½d.
Ester Gum pcag 130s.—150s.
Flexol 3GO 4s. 8d.
Hercolyn pc 242s.—294s.
Lankroflex ED3 3s. 2d.—3s. 2½d.
Lankroflex 29 pt £216—£217
Lead Stearate ptxwdp £223 10s.
Methyl Ricinoleate 2s. 4d.—2s. 4½d.
Me. Ac Ricinoleate 2s. 11½d.—3s. 0½d.
Polyglycol Oleate 400 pt £285
Reomol D79A pt £354—£357
Reomol D79S sp 5s. 0½d.—5s. 2d.
Reoplex 100 sp 6s. 1½d.—6s. 2½d.
Reoplex 110 sp 5s. 10d.—6s. 5½d.
Reoplex 220 sp 5s. 6½d.—5s. 8d.
Reoplex 300 sp 7s. 2d.—7s. 3½d.
Reoplex 400 sp 4s. 2½d.—4s. 4d.
Rosin Oil pgag 8s.—18s.
Triphenyl Phosphate pt £366
Tricresyl Phosphate pt £233
Trixylyl Phosphate pt £200
Zinc Stearate ptdel £220—£230

Solvents and General Chemicals

Acetic acid ptdel £77—£100
Acetic Anhydride ptdel £128
Acetone ptdel £75—£120
Alcohol:
Absolute 74.5 op pgdel 4s. 0½d.—4s. 4½d.
Butyl pt £132—£193 10s.
sec-Butyl ptdel £128—£168
Ter-Butyl ptdel £172—£195
Isopropyl Tech. 99% pgdel 5s.—6s. 5½d.
Butyl 'Carbitol' pt £283
Butyl Acetate pt £159—£217
Caprylic Acid ptdel £395
Carbon Bisulphide ptxs £71 10s.
Carbon Tetrachloride pg 12s. 4d.—20s.
'Cellosolve' Acetate pt £250
Cresol m- 98% del 4s. 9d.
Cresol o- 30/31°C. del 1s.
Cresol p- 34/35°C. del 5s.
Ethyl Acetate pt £131—£189
Formaldehyde ptdel £40
Glycol:
Diethylene pt £158
Ethylene pt £132
Polyethylene 200 pt £214
" 300 pt £214
" 400 pt £214
" 1,500 pt £264
" 4,000 pt £274
" 6,000 pt £294
Isopropyl Acetate pt £126—£184
Isobutyl Acetate 80% pt £126—£185
Lauric Acid ptdel £273
M.E.K. ptdel £134 10s.—£143 10s.
M.I.B.K. ptdel £166—£209
Methylated Spirits pgdel:
Industrial 61op 5s. 5½d.—7s. 2d.
" 74 op 6s. 3d.—7s. 11½d.
'Q' grade 68 op 8s. 5½d.—10s. 5d.
Pyridinised 66 op 5s. 10d.—7s. 6½d.
Denatured Methanol 3s. 9½d.—4s. 10d.
Monoethanolamine pt £252
Naphtha Coal tar pg:
Heavy 90—190 4s.
Light 90—160 5s. 1d.
Palmitic Acid ptdel £147
Phenol pldel 1s. 4d.—1s. 7d.
Pyridine pg 16s. 6d.
Stearine ptag £108—£130
Toluol Pure/Nitration pg 5s. 8d.
Toluol 90's pg 5s.
Triethanolamine pt £224
Xylol 2/30 pg 5s. 9d.

British Standards

BS 3387:1961
Butyl Insulated Cables

This new standard gives requirements and dimensions for cables and flexible cords insulated with butyl rubber in association with a heat-resisting fibre layer. They are suitable for use where the combination of ambient temperature and temperature rise due to load results in a continuous conductor temperature does not exceed 100°C. Together with BS 3258, 'Silicone-rubber-insulated cables and flexible cords', published last year (*RPW*, September 3 1960, 357), this standard replaces the part of BS 1327: 1946, 'Insulated asbestos roved flexible cords', which dealt with flexible cords insulated with vulcanized rubber and asbestos. The other part of BS 1327, which dealt with flexible cords insulated with varnished cambric and asbestos, has already been replaced by BS 3249, 'Cables and flexible cords insulated with varnished cambric and heat-resisting fibres'.

The standard contains details on general construction and dimensions; construction of 250/440 volt and 660/1100 volt cables and flexible cables; construction of 250/440 volt flexible cords, and tests to be carried out on finished cables and cords.

Copies of this Standard may be obtained from the British Standards Institution, Sales Branch, 2 Park Street, London, W.1, price 5s. each.

BS 2899: Part 3: 1961
Butyl Rubber Insulation and Sheath

This new part of BS 2899 extends the scope of the standard to butyl rubber, which is coming increasingly into use in electric cables. Two types of insulation, one of which is ozone-resisting and suitable for high-voltage cables, and one type of sheath are specified.

Part 1 of the standard, issued in 1958 deals with insulation and sheath made of natural rubber. Styrene butadiene rubber and polychloroprene. Part 2 published last month (*RPW*, August 5, 226) deals with silicone rubber.

As in Parts 1 and 2 of the standard, the test requirements in Part 3 apply to samples taken from finished cables, but optional tests for water absorption and volume resistivity at the core stage of manufacture are also included.

Copies of this standard may be obtained from the British Standards Institution, Sales Branch, 2 Park Street, London, W.1, price 5s. each.

Latest Wills

Ralph Hewitt Embleton, of 10 Ashleigh Grove, Tynemouth, Northumberland, late director and secretary of Commercial Plastics Ltd., Willington Quay, associated with the formation of Tyne Plywood Works Ltd., a former chairman of British Plywood Manufacturing Association, a member of the National Joint Council of the British plywood industry, and served on the Tyneside District Advisory Committee of the North Regional Board for Industry, who died on March 23 1961, aged 81 years, left £61,394 net value.

NEW COMPANIES

Intercontinental Rubber and Plastics Ltd. (696,560). June 26. Capital: £5,000 in £1 shares. To carry on the business of manufacturers, importers and exporters of rubber, plastics, etc. The directors are: Joseph McMurray, 33 Belgrave Road, New Moston, Manchester, 9; Harold E. Critch, 103 Langton Street, Salford, 6. Regd. office: 1 Central Street, Manchester, 2.

Industrial Foams Ltd. (696,435). June 23. Capital: £100 in £1 shares. To carry on the business of manufacturers of, and dealers in, plastics, etc. The directors are: L. Laurence I. Halpin, 10 Hanover Crescent, Brighton; James H. Bray, 43 Hollingbury Park Avenue, Brighton, 6.

J.P.R. (Plastics) Ltd. (695,086). June 9. Capital: £2,000 in £1 shares. To carry on the business of dealers and agents in plastics materials, etc. The first directors are to be appointed by the subscribers. Solicitors: Anthony M. Midgen and Co., 30 Norfolk Street, W.C.2.

Nylon Plastics Co. Ltd. (695,715). June 16. Capital: £100 in £1 shares. The directors are: Douglas H. Young and Marjorie Young, both of 818 Whalley New Road, Blackburn. Regd. office: Navigation Mill, Forrest Street, Blackburn.

Vitafoam Pension Fund Ltd. (696,460). June 23. A company limited by guarantee without share capital. To act as trustees of superannuation or other funds of Vitafoam Ltd., etc. The directors are: Norman Grimshaw, 62 Lees Road, Ashton-under-Lyne; Graham H. Smith, 312 Wilbraham Road, Chorlton-cum-Hardy, Manchester; Temley A. Parker, John Cheethan and James H. Ogden. Regd. office: Don Mill, Middleton, Lancs.

Express Tyre Service (Worthing) Ltd. (696,331). June 23. Capital: £1,000 in £1 shares. To carry on the business of manufacturers and repairers of, and dealers in, tyres for all kinds of vehicles, etc. The first directors are to be appointed by the subscribers.

Silverdale Plastics Ltd. (697,446). July 5. Capital: £500 in £1 shares. To carry on the business of manufacturers, prefabricators, producers, exporters and importers of, agents for, and dealers in, plastics goods, products and appliances, plastics mouldings, polyester resins, etc. The directors are: Mrs. Rhoda I. Walmsley, 2 Wordsworth Road, Old Trafford, Manchester; James D. Parry, 20 Gilpin Road, Urmston, Lancs. Regd. office: 26a Broad Street, Pendleton, Lancs.

Barton Battery (Tyres) Ltd. (697,544). July 6. Capital: £100 in £1 shares. To carry on the business of dealers in tyres, etc. The first directors are to be appointed by the subscribers.

District Tyres Ltd. (697,403). July 5. Capital: £100 in £1 shares. The directors are: Robert Edwards, 219 Woodcock Hill, Preston Road, Harrow, Middlesex; John V. Barker, 13 Compton Place, Carpenders Park, Watford. Regd. office: 244 Earlsfield Road, S.W.18.

Alando Plastics Ltd. (697,116). July 3. Capital: £100 in £1 shares. The directors are: Isobel M. Morton, 87 Ferrymead Gardens, Greenford, Middlesex; Joan L. Ward, 49 Wolseley Avenue, S.W.19. Regd. office: Abford House, Wilton Road, S.W.1.

Eric Ormerod Ltd. (696,675). June 27. Capital: £100 in £1 shares. To acquire the business of foam rubber and carpet merchants carried on by H. E. Ormerod at Waterfoot, etc. The directors are: George E. Ormerod and Winifred M. Ormerod, both of 13 Orchard Avenue, Bolton-le-Sands. Regd. office: Ormdale Works, Miller Barn Lane, Waterfoot, Lancs.

Du Pont's melt-processible Teflon FEP-fluorocarbon resin is being used for many electrical and electronic components. Applications include coil forms, insulators, hermetically-sealed terminals and the injection-moulded tube sockets shown here

COUNTY COURT JUDGMENTS

NOTE.—*These Judgments which are supplied from the Registry of County Court Judgments, Lord Chancellor's Department, 3 Dean's Yard, London, S.W.1, are not necessarily for debt, and some may have since been satisfied. They may be for damages or otherwise, they may relate to actions bona fide contested between the parties, or they may be against defendants liable in a representative capacity and not personally; but no distinction is made on the register. A judgment does not imply inability to pay. Judgments are not returned to the Registry if satisfied in Court Books within twenty-one days.*

The Tyre Depot, Oswald Road, Moordown, Bournemouth, Hants. Halifax, £23, March 13 1961.

Elliott Jones and Co., Peninsular House, 28/34 Monument Street, E.C.3, Middlesex, rubber merchants. Mayor's and City, £49, March 7 1961.

G. Morris (t/a Acton Tyres), 230 Horn Lane, Acton, London, W.3. Croydon, £17, April 13 1961.

Vogue Plastics Ltd., 28/30 John Dalton Street, Manchester, 2, Lancs, plastics stockists. Westminster, £30, April 20 1961.

Beaminster Woodworking and Plastic Co., Church Street, Beaminster, Dorset, Bow, £24, April 13 1961.

Charles King Plastics, 18a Fetter Lane, Skeldercate, Yorks. Bow, £66, May 5 1961.

Bernard Corrigan, 3 Marland Street, Ashton-under-Lyne, Lancs, rubber manufacturer. Stockport, £18, May 8 1961.

Southern Battery Tyre Co., 14 Thornhill Road, Southampton, Hants. Brighton, £58, April 28 1961.

Bildix (Mnfg.) Co. Ltd., 69 Lewisham Way, S.E.14, London, dealers in plastics materials. Woolwich, £58, April 26 1961.

Goswell Plastics Co., Pembroke Wharfe, All Saints' Street, London, N.1, Bournemouth, £38, May 10 1961.

Increases of Capital

Woodville Rubber Co. Ltd. (453,853), Burton Road, Woodville, Burton-on-Trent. Increased on October 15 1960, by £20,000 in £1 ordinary shares, beyond the registered capital of £20,000.

Craigielea Rubber Plantations Ltd. (209,965), 14 Leadenhall Street, E.C.3. Increased on November 11 1960, by £450,000 in 2s. shares, beyond the registered capital of £400,000.

Kulim Rubber Plantations Ltd. (277,534), 10/15 Mincing Lane, E.C.3. Increased on December 16 1960, by £250,000 in 2s. shares, beyond the registered capital of £1,500,000.

Midafoam (Plastics) Ltd. (655,805), 180 Bethnal Green Road, E.2. Increased on December 7 1960, by £900 in £1 ordinary shares, beyond the registered capital of £100.

Changes of Name

Birmingham Motor Tyre Repository Ltd. (302,493), 6 Corporation Street, Birmingham, 2. Name changed to Birmingham Motor Tyres Ltd. on November 16 1960.

Beaufort Borneo Rubber Co. Ltd. (93,012), 9 Drapers Gardens, Throgmorton Avenue, E.C.2. Name changed to Central Beaufort Investments Ltd. on December 21 1960.

Research Association of British Rubber Manufacturers (WLO) (159,453), Shawbury, Shrewsbury. Name changed to Rubber and Plastics Research Association of Great Britain on November 24 1960.

CLASSIFIED ADVERTISEMENTS

RUBBER AND PLASTICS WEEKLY

APPOINTMENTS VACANT

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EXPANDING North-East Lancashire plastics company requires a development engineer with experience of hand lay-up and match metal moulding in both epoxy and polyester resins. This is a senior appointment and only first-rate engineers need apply.—Box 418. (418)

HATCHAM Rubber Co., Ltd., Princes Way, Waddon, Croydon, seek the services of an experienced rubber chemist/technologist to assume technical control of works production and to carry out development work—mainly for the footwear and cable industries. An attractive salary, according to experience and qualifications, will be offered to a suitable applicant. (419)

LABORATORY assistant (male) wanted by rubber manufacturers in Bermondsey. Age approximately 16/18 with 'A' or 'O' level G.C.E. subjects. Previous laboratory experience desirable but not essential. Holiday arrangements honoured. Salary £300/£400 p.a.—Please apply to C. E. Heinke and Co. Ltd., 87 Grange Road, London, S.E.1. BERmondsey 4461. (435)

PRESS room charge hand—calender operator. Applicants for these positions should have had considerable experience and be prepared to work day and night shifts with a fair amount of overtime.—Write giving details of age, experience and wage sought, to Hatcham Rubber Co. Ltd., Princes Way, Waddon, Croydon, Surrey. (420)

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experienced in modern methods of production and technical control of all types of machine, hand made and braided Hose. Particular opportunity for successful applicant who wishes to progress rapidly.—Write to Assistant Managing Director, Ordsall Lane, Salford, 5, giving full details of age and industrial experience. (437)

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YOUNG man required, preferably LIRI qualification or equivalent, to train for management position in general mechanical division of large rubber company in Manchester area. Excellent opportunities for rapid advancement to applicant prepared to work hard and use initiative. Salary in accordance with age and ability.—Write giving details of experience, etc., to Box 436. (436)

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HYDRAULIC presses, pumps, valves, new, also large second-hand stock.—Thompson and Son (Millwall) Ltd., Cuba St., London, E.14. East 1844. (427)

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MELLOR Equipment Ltd., Springfield Lane, Salford, 3, buy used machinery of Francis Shaw and Joseph Robinson manufacture.—Telephone Manchester, Blackfriars 1866. (428)

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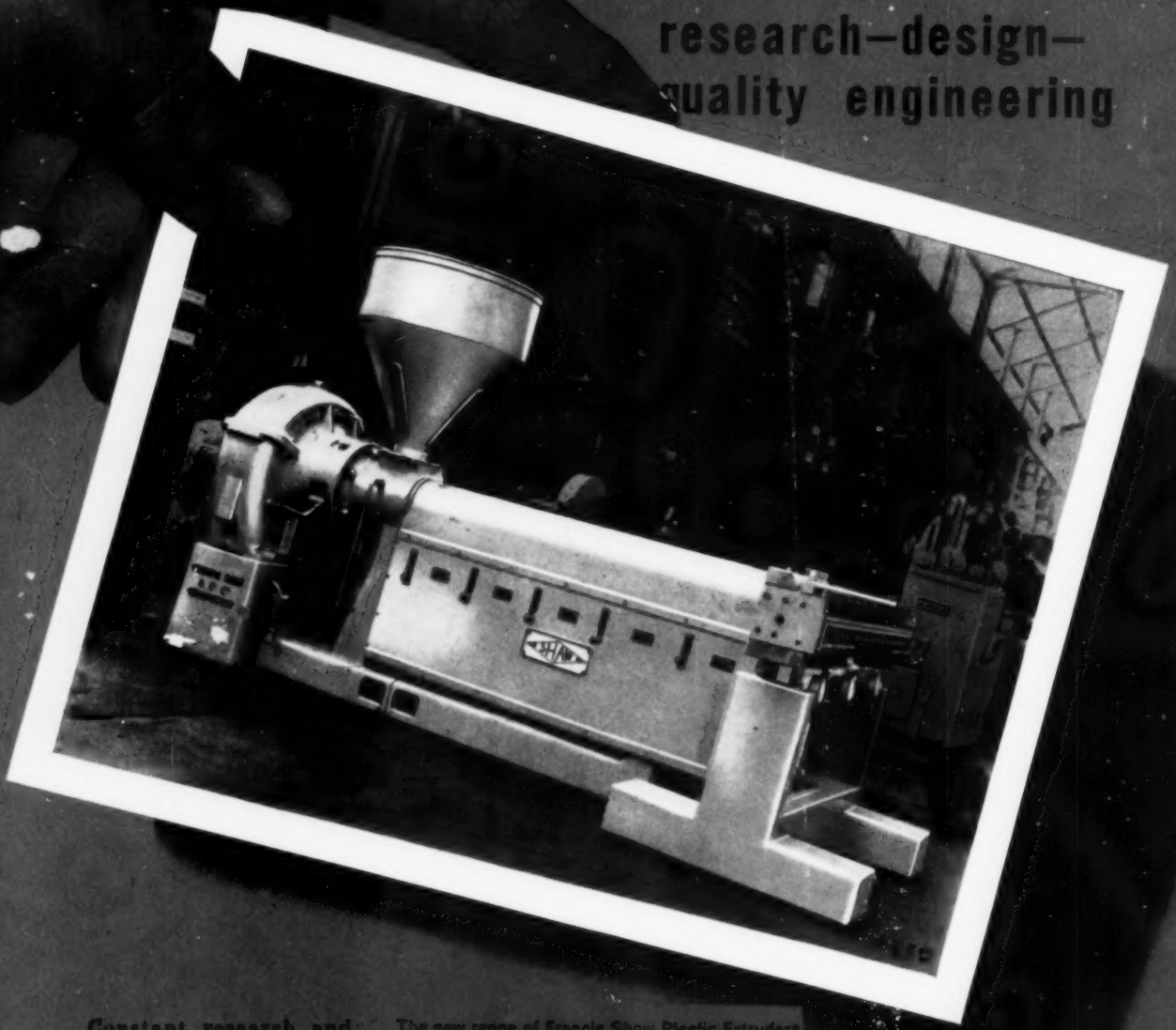

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